University News

A WEEKLY JOURNAL OF HIGHER EDUCATION Vol 37 No 33 AUGUST 16, 1999 Rs 9.00

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Association of Indian Universities

Shastri Indo-Canadian Institute
FELLOWSHIPS FOR CANADA 2000-2001

1. CANADIAN STUDIES FELLOWSHIPS FOR 2000-2001

The Department of Foreign Affairs and International Trade, Government of Canada, through Shastri Indo-Canadian Institute, invites applications from Indian scholars for Canadian Studies Faculty Research, Faculty Enrichment, and Doctoral Research Fellowships.

Eligibility : Applicants in all categories must be citizens or permanent residents of India and proficient in either English or French. Repeat applications for faculty awards will not be considered until the objectives of the earlier award have been demonstrably achieved.

a. Canadian Studies Faculty Research and; b. Faculty Enrichment Fellowships
These awards are intended to fund a visit to Canada of up to five weeks in duration to work on projects identified by the applicants. The projects should lead to the publication of scholarly articles in India in the case of research awards and the development of courses on Canada in Indian universities in the case of enrichment awards. Preference will be given to projects which focus on topics in the social sciences and the humanities and which lend themselves to enhancing the understanding of Canada, or of the Canada-India relationship, in India.

Applicants will normally be full-time members of the academic staff of a recognized institution of higher education or an equivalent degree-granting organization in India. Faculty Research applicants may also be scholars at research and policy institutes in India or professors emeriti. Applicants should hold a degree equivalent to postgraduate qualification. Applications will be considered from those without these formal qualifications only if successful research and teaching experience can be demonstrated. Applicants able to provide evidence of their interest in or involvement with Canada prior to the application will be preferred. This may be demonstrated by courses already given, research undertaken, active membership in relevant organizations. etc.

Please note that all successful applicants in both faculty categories will be required to attend a Canadian Studies summer-institute-cum-orientation session for four days in May or June 2000 at a location in Canada to be announced and a one day orientation workshop in New Delhi. The remainder of the award period will be spent working on the projects proposed in the applications.

c. Canadian Studies Doctoral Research Fellowships (Canadian Studies Graduate Awards)
These awards are intended to fund research in Canada for a period of up to ten months on the applicants doctoral dissertation. Preference will be given to applicants whose dissertations focus on topics in the social sciences and the humanities, which are most likely to advance understanding of Canada in India. Applicants must be enrolled as doctoral candidates in a recognized institution of high education or equivalent degree-granting organization and must expect to have completed non-thesis requirements of the Ph.D. by the time the tenure of the award commences.

II. Shastri Indo-Canadian Institute, with funding from the Canadian International Development Agency (CIDA), invites applications from established Indian Scholars in the areas of Development and Environment, Social and Economic Reform, Private-sector Development, Gender and Development; for the followships :

a. Development Studies in Social Sciences and Humanities : This fellowship enables the Indian Scholar to undertake research and related activities on various development issues. Duration : four months between 1 September 2000 and 1 January 2001.

b. Women and Development

i) **Faculty Research Fellowship :** These fellowships enable the faculty members of Indian Colleges and Universities to carry out research in Canada. Duration : four months between 1 September 2000 and 1 January 2001.

ii) **Doctoral Research Fellowships :** This fellowship is intended to support research in Canada on the applicant's doctoral dissertation. Applicants must be enrolled as doctoral candidates in a recognized institution of high education or equivalent degree-granting organization and must expect to have completed non-thesis requirements of the Ph.D. by the time the tenure of the award commences. Duration : up to eight months between 1 September 2000 and 1 January 2001.

iii) **Pilot Project Awards :** This award makes possible the preliminary exploration of a research proposal that gives promise of substantial further development. Duration : up to two months between 1 September 2000 and 1 January 2001.

iv) **Visiting Lectureships :** These fellowships enable Indian scholars to visit Canada for a period of three weeks to give lectures and to do some networking with colleagues in their academic area. Duration : three-week lecture tour in Canada between 1 September 2000 and 1 January 2001.

c. Media Fellowships : These fellowships supports the research of mid-level journalists in print and electronic media in Canada for a period of four months each to explore in depth a developmental issue. Duration : four months between 1 September 2000 and 1 March 2001.

Since these awards are a part of the Institute's Development Studies Programme, work to be carried out during the tenure of the fellowships must have a clear developmental significance.

General Eligibility : Candidates must be; i) citizens or permanent residents of India; ii) have a clear and focused plan of work which can reasonably be implemented during the tenure of the fellowship, and iii) be prepared to leave for Canada no later than 1 January 2001 if selected.

Value : i) Excursion rate return air ticket between India and Canada; ii) Cdn $ 500 for books and personal effects; iii) a living and accommodation allowance.

ENQUIRIES AND APPLICATION FORMS

[illegible] Shastri Indo-Canadian Institute, 5, Bhai Vir Singh Marg, New Delhi-110 001.

[illegible]

DEADLINE [illegible] September 10, 1999 by post and September 17, 1999 in person and for RECEIPT of completed applications : October 1, 1999 (5.00 p.m.)

UNIVERSITY NEWS

VOL. 37 AUGUST 16
No. 33 1999
Price Rs. 9.00

A Weekly Journal of Higher Education published by the Association of Indian Universities

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Employment Avenues for Gender Studies in India

S. Gokilvani*

Women's Studies Programmes

Women's Studies was envisaged by the National Policy on Education as a strategy for achieving a fundamental change in the status of women in India through research and outreach programmes of development. Institutional mechanisms have been adopted to take up women development studies and programmes so as to, attain women's empowerment. Teaching of women's studies, researching on women's issues, training for enhancement of women's potential and organising extension programmes for women's development were perceived to be the four major dimensions of women's studies programmes that would ultimately bring about a radical change not only in the status of women in India but also in the very understanding of women's role, status, problems and experiences. All these dimensions catagorise women's issues into different disciplines, eliminating sexist bias and sex-stereotypes, orienting the faculty to handle women related issues, and restructuring existing curriculum of all disciplines based on women's/gender studies perspective.

The *modus operandi* to adopt women's studies as a critical appraisal was also suggested which stressed conducting of seminars, workshops, orientation programmes and introduction of foundation course, thereby radical, reformative measures were stressed with the realisation that such an education would have way for women's equality by the next decade.

Subject Matter of Women's Studies

The term women's studies has surprisingly been understood as simply a study of women in the beginning and the crux of women studies is fully understood from the right perspective later on. Women's studies perspective in other words called feministic perspective lays emphasis on the placing of women's own experiences in the centre of process. Categorically this perspective criticised the existing theories, interpretations of the behaviours of human beings, and the nature as the male's approach that failed to reflect women's reality. They all lack women's experiences of reality and true interpretations for women.

This realisation about the failure of every other discipline in reflecting women's reality demanded the re-examination and revision of their basic assumptions and theories. The methodologies and the research techniques of established disciplines are to be challenged and fresh views about "Women's world" have to be provided by cutting across the boundaries. Thus women's studies provides a coherent knowledge pertaining to women, by changing the fundamental views on women. According to feminists "women's studies is an exciting process and a challenging one for those who attempt to bring out these changes."

Feminism vs Women's Studies

Feminism as an ideology, both preaching and practicing women's

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liberation and equality added with attributes like Justice, Indiscrmination, Development and Empowerment of women, has closer affinity to the discipline of women's studies, hence otherwise called feminist study. Feminists on the one hand reject the negative cultural images of women, assignment of socially established roles and statuses between male and female, supremacy of masculine qualities over feminine qualities, demanding an evaluation between male and female on its own merits, and on the other hand feminism attempt to replace ignorance and fantasy with knowledge and reality. This ideoloy advocates a persistent and collective efforts of women to bring about betterment for themselves. Thus collective efforts and shared goals are the core of feminism, that can be obtained from the collective consciousness raised through women's studies and knowledge gained out of it. Thus theoretical knowledge of women's studies provides a base for feminist activities in a society.

Women's Studies vs Gender Studies

The term women's studies although found its significance in the context of women's development and empowerment not only provide a negative connotation to the fundamental disciplinarians, but also enlightened the women collectives to fight against gender discrimination, gender inequality and gender injustice. Later, as the feminist ideologies got advanced and underwent a lot of modifications in terms of goals i.e., from liberal to radical through Marxist and socialist feminism. Women as an entity and their social existence were later on understood as having "gender" base (as sociological entities) rather than mere "sex" groups (not merely biological entities). The underlying gender issues are responsible for the discrimination between male and female, men and women and between boys and girls. Hence studying women's experience with women only will not yield the inherent dichotomy by which the superiority-inferiority relationship, higher-lower status, more-less roles and responsibilities between men and women was not given due recognition in the context of women's studies, as it projected only women's problems, their issues and development. Now it is realised that a simultaneous comparison between male and female statuses and relationship alone will bring out the intensity of gender discrimination and gender inequality. In simple terms women's development, discrimination and problems should be analysed in relation to the same pertaining to men. Such an approach that speaks for "women in reference to men" is the basic core of gender studies. Thus there is a shift, in the approach and analysis of women issues, taken place from women's studies to gender studies all over the countries and India is no exception to this.

The University Grants Commission, an apex body of higher education, has now laid its thrust on women's/gender studies in the IX Five Year Plan. It encouraged universities and colleges to come forward with proposals for setting up of women's studies centres/cells and the introduction of women studies curriculum at all levels.

Although there are 24 centres and less than 100 cells for women's studies all over India, many of the Indian Universities are reluctant to introduce women's studies as a discipline/course mainly because they are worried about the employment opportunities for the students of such courses. When every discipline has its own scope, in terms of employment, women studies has no such defined scope sheerly because of its inter-disciplinary and multi-disciplinary nature in the curriculum and subject matter. It is high time that one must explore the avenues of employment for women's studies student only then, the strength of the students to women's studies could be enhanced in the institutions having already introduced the course namely Alagappa University, Karaikudi, Sri. Padmavathy Women's University Tirupathy, Mother Teresa Women's University Kodaikanal, and NMKRV College, Bangalore. Although nearly seven batches of women's studies students have gone out successfully from these universities over the years, due to the uncertainty over their job prospects, these institutions could not enhance enrolment and create competitions as well as receiving meritorious candidates to this course. It is hence the moral responsibility and bounden duty of the faculties to identify the suitability and appropriateness in areas of development, social service and social welfare and to make serious efforts to find placement for the students in those areas. Unless and until then, the UGC's and the nation's priority on women's/gender studies will be defeated.

Job Prospects and Employment Scope for Gender Studies

Non-Governmental Organisations (NGO)

Right now the NGOs working in the implementation of women development projects funded both by the national and international agencies absorb women's studies students immediately as Women Development Co-ordinators and field officers. This placement though provides immediate job, is however an under employment to a postgraduate in women's studies added with no security for job, no opportunity for promotion, no fixed scale of pay (usually consolidated salary, no increment and retirement benefits. This has resulted in the high drop-out rate from jobs in NGO's by the women's studies students. However, employment in NGOs can be regulated through campus interview, ensuring the nature of job and salary to Women's Studies students.

Dowry Prohibition Officers

Section 8(b) of the Dowry Prohibition Act, 1961, amended by Act 63 of 1984 recommends the appointment of the Dowry Prohibition Officer by the State Government with certain powers and functions and with an ultimate aim of preventing the problem of dowry.

In addition, this Act makes provision for appointing an Advisory Board consisting of not more than 5 Social Welfare Workers out of whom atleast two shall be women. No doubt women's studies students who are trained in women's legal rights as one of the hard core papers are the most suitable to be the Dowry Prohibition Officers and as Social Welfare Works in the field of dowry prohibition.

Officers in the Special Police Office

Section 13(b) of the Immoral Traffic (Prevention) Act, 1956, amended by Act 44 of 1986 recommends the appointment of Non-official Advisory Committee consisting of not more than 5 leading social workers (including women social welfare workers wherever practicable), to advise the Special Police Officer in connection with the prevention of immoral trafficking.

No. 4 of section 13 of the ITP Act also recommends the appointment of Trafficking Police Officers, who have to perform the investigation of offences under any law for the time being in force, dealing with sexual exploitation of persons. Normally police officials are assigned the duties of the Trafficking Police Officer along with the rest of routine duties as a Police Officer. This makes it clear that a person with women's studies background is more appropriate to be the Trafficking Police Officers to work along with other preventive Police Officers, mainly because the former is only an Investigative Officer.

Superintendents and Probation Officers

Section 21 of the ITP Act prescribes a particular manner of maintaining the Protective Homes and Corrective Institutions. Accordingly, "provided the management of protective homes and/or corrective institutions shall, wherever practicable, be entrusted to women." As the prostitution is more a women's problem than a social one from the feministic point of view, the prevention of prostitution requires a new and different approach which is possible only by the gender studies students.

The ITP Act also emphasises the presence of women social worker in the following way : ".....while in custody, interrogation of women and girls removed from the brothels to be held by women police officers or in the presence of women social workers..." This area, also requires gender studies students to be appointed as Women Social Workers in the Protective and Corrective Homes.

The Juvenile Justice Act stresses the appointment of a probation officer to certify the character & conduct and the familial, social, and economic background of the juvenile delinquents in the After Care Homes, in the Directorate of Social Defence to which women's studies students have to be considered to become probation officers.

Devadasi Prohibition Officers

Section 7 of the Andhra Pradesh Devadasis (Prohibition of Dedication) Act 1988, says that the government may confer powers "... or any other officer of the Revenue Department not below the rank of Mandal Revenue Officer ...are properly carried." Accordingly the practice of devadasi must be prohibited by approaching devadasi system from the experiences of women, as advocated in feminist studies. Undoubtedly, a student of women's studies is a most suitable person to be appointed as Devadasi prohibition officer to work with the District Collector in matters relating to devadasi practice.

Officers in Family Court

According to No. 6 of Chapter 2 of the Family Courts Act (66) of 1984, "the State Government shall ...provide the family court with such counselors, officers and other employees as it may think fit." This Act makes a specific mention about the terms and conditions of the services of the officers, employees and counselors in its sub section 1. Similarly No. 12 of Chapter 4 of the Family Courts Act provides the possibility in securing the services of ...preferably a woman wherever available ...including a person professionally engaged in promoting the welfare of family as the court may think fit, for the purpose of assisting the family court in discharging the functions imposed by this Act. It goes without saying the effective functioning of the family court can be ensured only when it has gender studies personnel in the capacity of counselors and officers.

Legal Aid Officers

Legal Aid Centres have been established under the provision for implementing legal aid schemes and state legal aid and advisory boards, with the specific persons course management etc. The purpose of the PPS is to seek participants perceptions about various aspects of the course and also to ascertain from them the weaknesses of the programme so that suitable measures are taken to improve its quality. This tool was finalised with the help of experts and teachers.

2. **Focus Group Discussion (FGD) :** This technique was developed and used to seek participants reactions about the appropriateness of inputs used to organise inservice training programme such as course content, training material, transactional approaches, resource persons etc. The purpose of organising group discussion is to elicit such information from participants as cannot be obtained through questionnaires.

Design of the Study

The following steps were involved in the preparation of design of the study :

Meeting with SCERT Gurgaon : The Haryana state had organised in-service education programme for the primary teachers in DPEP districts. In connection with this study, Director, SCERT, Gurgaon was contacted in the month of June 1997 to discuss the plan of the study. The related materials, training package and time schedule of the training were collected. Keeping in view the time constraints, the last training programme organised at BRC I and II at Hisar from 11-19th August 1997 was selected, for observation.

Development of Tools : The tools and techniques mentioned earlier were prepared keeping in view the objectives of the study. The guidelines for the use of these tools were also prepared.

Data Collection : PPS was administered on all the 127 teachers to study their perception about the quality of training and two focus group discussions were also conducted in small groups just to validate the responses expressed through PPS. Both the tools were administered during the training programme for collection of data.

Data Scrutiny : The data were scrutinised during the training programme. The final scrutiny of data was also made before analysis.

Statistical Analysis : Descriptive statistics (percentage) were used for analysing data with regard to teachers perceptions.

Results and Findings

Physical Facilities

The building of BRC-I, Hisar was under construction whereas BRC-II was housed in an old building of a Govt. Primary School. However, both were adjacent to each other in the same campus. Both the training camps were non-residential because of lack of hostel facility. The teachers used to commute daily to attend this training programme. They were paid Rs. 30 to 40 as daily allowance according to their basic pay. The water facility was not available in the training campus. The water had to be stored in pots from outside. 47.24 per cent teachers expressed that the room for seminar was inadequate.

Room for Group Work

There was no facility of rooms available for group work separately. The same opinion was revealed in focused group discussion by the teachers.

Appropriate Furniture in Seminar Room

About eighty per cent teachers stated that furniture in the seminar room was not appropriate. There was no facility of tables and chairs in the seminar room. The teachers used to sit on the floor. There was only one chair and table available for the Resource Persons.

Blackboard

The blackboard was provided in both the centres, but the quality was not adequate.

Toilet Facility

There was one toilet available in BRC I but it was quite inadequate. No water facility was available in the toilet and water was put in a pot outside. But no toilet facility was available at BRC II. Separate toilet for female teachers too was not available at both the centres.

Library Facility

Library facility is the most important and integral part of training but this facility was not available at both the centres.

Learning Material

Learning material play an important role in improving the quality of training. During this training programme training package, pen, notebooks etc were provided to the teachers. The textbooks of primary classes and Hindi dictionary were available at the centre for consultation. Almost 100 per cent teachers stated that they were not provided training package before the training.

They were provided the training material on the first day of the training programme. Besides this, most of the teachers expressed that the quality of training material was not satisfactory. There were printing mistakes, inadequate examples and less content in the module of learning package. The organisation of material in the modules was not logical, sequential and comprehensive. The teachers were also asked about the use of technical aids.

Technological Support

All the teachers expressed that the instruments like Overhead projector, Television and Video were available but these were never used during the training programme in any of the sessions by the Resource Persons. It was also clearly stated by the teachers in the focused group discussion.

Course Content

The appropriateness of the course content is the most important aspect on which the quality of the programme rests. If it is not appropriate, objectives of the programme cannot be realised.

As many as 68.5 per cent teachers expressed that they had clarity about the objectives of the course upto some extent while 37 per cent teachers said that they had clarity to a large extent. Beside 57.48 per cent teachers stated that objectives of the course were meeting their training needs upto some extent.

More than 60 per cent teachers stated that the course content was comprehensible to them while 36.2 per cent teachers said it was comprehensible upto a large extent.

Need Based Training Modules

The teachers were asked about the relevance of modules. More than seventy per cent teachers were statisfied with the available training modules and found these relevant. However, 25 per cent teachers did not make any response. But during focused group discussion it was expressed by some teachers that modules on different subjects in one package did not fulfil the needs and also spoil the sequence and continuity. The package consisted of modules on Mathematics, Language and General Education which were not relevant towards need based training. The teachers suggested the following areas for inclusion in the future programme.

Table-1 : Areas to be included in Future Programme (N = 127)

Sl. No.	Areas (Mathematics)	No. of Teachers	Percentage
1.	Area	35	27.55
2	Bracket	38	29.92
3.	Unitary Method	42	33.07
4.	Time & Work	32	25.19
5.	Time & Distance	44	34.64

Transactional Approach

The quality of an inservice training programme depends to a great extent on the transactional approaches. The teachers were asked about the approaches used predominantly during the training programme.

Table-2 : Approaches Used by Teachers (N=127)

Sl. No.	Methods	Mostly	Sometimes	Never
1.	Lecture	125(98.4)	2(1.6)	0
2.	Demonstration	40(31.5)	86(67.7)	1(0.8)
3	Lecture-cum-Discussion	60(47.3)	67(52.7)	0
4.	Activity Based	14(11.02)	96(75.6)	17(13.4)
5.	Group Discussion	40(31.4)	48(37.8)	39(30.8)
6.	Assignment	05(3.9)	06(4.8)	116(91.3)
7.	Self Study	05(3.9)	6(4.8)	110(86.6)
8.	Field Study	0	12(9.5)	122(96.1)
9.	Guided Self Study	0	1(0.81)	126(99.20)

It is quite clear from the above Table that lecture method was mostly used in transacting the course content during the training programme. This was followed by Lecture cum Discussion and sometimes Demonstration and Activity based methods were also used. But other methods like Field Study, Self Study, Assignment were never used. In this regard, about sixty per cent teachers were satisfied upto some extent with the transactional approach followed during the programme while 37.8 per cent were satisfied upto a large extent. Mostly the same approach was used for transacting course content.

Resource Persons

The competence of Resource Persons is an important aspect which affects the quality of an inservice training programme. During this training programme there were nine Resource Persons, four in BRC-I and 5 in BRC-II who transacted the course content. Out of nine, six were retired persons (four as Headmasters, one as Joint Director and one as Lecturer), one was unemployed and two were on deputation from schools. But the experience of these Resource Persons in the field of elementary classes was very little. Only one resource person was untrained and all others were trained. Out of nine, two were graduate and other seven were having post-graduate degree.

More than fifty five per cent teachers expressed that the Resource Persons dealt with the assigned topics satisfactorily upto to a large extent while 52 per cent said that they could do justice upto some extent. Besides this two guest speakers were also invited for delivering talks on moral education and motivational aspect of teaching. During the focused group discussion it was revealed by the teachers that though the Resource Persons were provided training at SCERT, Gurgaon before teacher's training but they were not having the mastery over the subject. They used to transact both modules related to Hindi and Mathematics and none of the Resource Persons prepared worksheet for teachers to strengthen their experience.

Management of the Course

As many as 64.57 per cent teachers were satisfied with the management of the training programme upto some extent while 33.86 per cent were satisfied upto a large extent. But the teachers expressed in discussion that the organisation of the programme was not satisfactory. There was no schedule of the programme and sessions continued upto three hours or more than that also. The course coordinators never delivered the academic lecture, they were busy with the administrative work. The teachers were also not satisfied with their behaviour.

Gain from the Programme

The teachers were asked upto what extent they were benefited in the area of general awareness, content enrichment, methodology of teaching etc. The following table presents the data.

Table-3 : Gain in Different Areas
(N=127)

S. No.	Area	Not at All	To Some Extent	To Large Extent	Not Responded
1.	General Awareness	03(2.36)	53(41.73)	55(43.30)	16(12.60)
2.	Content Enrichment	04(3.15)	55(43.30)	43(35.43)	23(18.11)
3.	Pedagogy (Methodology of Teaching)	06(4.72)	52(40.94)	59(46.46)	10(7.87)
4.	Course Management	0	71(55.91)	49(38.58)	07(5.51)

The above Table shows that more than 5 per cent teachers were benefited in the area of general awareness, content enrichment and pedagogy upto some extent and the same percentage of teachers were benefited upto a large extent. The picture could have become more clear if the non-respondent tachers could also have expressed their opinion.

Problems and Issues

The teachers expressed the following weaknesses of the programme.

Table-4 : Weakness of the Programme
(N=127)

S. No.	Problems	No. of Teachers	Percentage
1.	No break/vacation on National Holidays and Sundays	65	26.17
2.	Less opportunity for discussion	34	3.15
3.	Long Periods	21	16.54
4.	Subjects were hurriedly taught	25	19.69
5.	Lack of Audio-Visual Aids	38	29.92
6.	Poor Facility of Blackboard	42	33.07

The teachers were not provided break during this programme even on national holidays of 15th August and Sundays due to which teachers, particularlylady teachers, could not pull on with household jobs and could not concentrate during the programme. The teachers were not given adequate opportunity for discussion, subjects were hurriedly dealt, poor facility of black board, long periods, and lack of audio-visual aids were the other weaknesses of the programme expressed by them. In group discussion the teachers expressed that the training programme was not made joyful and interesting. The teaching aids were not prepared. There was no actual demonstration in the classroom.

Suggestions to Improve the Training

The teachers were asked to give suggestions to improve the quality of training. The following Table provides the data.

Table -5 : Suggestions to Improve the Quality of Training
(N=127)

S.No.	Suggestions	No. of Teachers	Percentage
1.	Joyful Learning	35	27.56
2.	Training to be Provided in the Schools	40	31.50
3	Talented Persons should be the Resource persons	60	47.24
4.	Child Psychology should be taught	36	28.35
5.	More no. of Training	26	20.47
6.	Playway Method	34	26.77
7.	Regular Assignments	16	12.60
8.	Use of Blackboard	39	30.71
9.	Detail discussion on the Subjects	54	42.52

The teachers have suggested that training should be organised in schools for better participation. The subject should not be dealt hurriedly, instead it should be discussed thoroughly. Child psychology should also to be taught for dealing with the children in an appropriate manner. Besides this, joyful learning, playway methods, use of blackboard and regular assignments also improve the quality of training.

Implications

The following interventions are needed to improve the quality of training.

The buildings with adequate facilities are needed to be constructed at BRC or venue of the training. The buildings should have facilities of toilets, both for male and females, library facility, water facility, adequate furnitures, blackboards and sufficient rooms for seminars and group discussions.

The learning materials need to be supplied to the teachers before coming to the training programme for better participation and learning.

The Resource Persons are to be provided training for handling the equipments like video, overhead projector and television in order to transact the curriculum through these technological aids.

The content of the course needs to be improved and it should be prepared on the basis of needs of the teachers. The modules are to be developed accordingly.

Besides lecture methods, more emphasis is needed on activity based method, play way method, self study, field study and group work for transacting the curriculum effectively and efficiently.

The relevant methods should be used according to requirement of the curricular areas.

Competent Resource Persons should be employed during training programme for improving the quality of the programme.

The management of the course needs improvement.

The modules need to be discussed in detail during the programme.

Emphasis should be laid on joyful learning for better involvement, participation and learning among the teachers.

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Information Needs of Researchers in English Language and Literature

—Literature Survey, Use Pattern and Sources

P.N. Vimladevi*

User studies restricted to the area of English language and literature are very few. Studies on humanities often highlight the needs of scholars in language and/or literature too as part of them. However, specific attention to the needs of language and literary scholars is seldom given.

Heinzkill (1980) in an analysis of references in selected scholarly English literary journals comes to the conclusion that monographs constitute the most used form of literature and journals rank only next to it. 75% of all citations in this study were to book.[1]

Stern (1983), made a study of the characteristics of the literature of literary ' scholarship' to determine how researchers use the literature that constitute literary scholarship. For this purpose he has selected three creative writers namely John Milton, Henry James and W.H. Auden and the literary movements such as Symbolism, Existentialism and Structuralism. The 1976-80 volumes of the 'Arts and Humanities Citation Index' provided access to the articles written on subject. The study was based on the reference cited by the authors of the articles and the form analysis of the articles. The study reveals that literary research relies heavily on research material published in book form and more heavily on the text of creative work. As the focus of research veers from textual studies toward literary theory, the role of the primary source material becomes markedly diminished. The age of the materials used by literary researchers on creative writers and on literary theory indicate that currency is uniformly an important factor. Materials nearly ten years old, about all three creative writers and two literary movements, symbolism and existentialism were found between 20 - 25 percentile range. And half of the material used on structuralism was nearly ten years old.

The results of this study reveal that the humanistic scholarship and the methods by which their characteristics are categorized and studied are distinctive and unique and require different methodology than that used for the analysis of information transfer in the sciences and social sciences.[2]

In 1985, John Cullars conducted a study based on references from thirty monographs. The purpose of the study was to identify (i) how scholars use the monographic literature in British and American literary studies (ii) how it offers or agrees with the use of journal literature in humanities.

The findings of this study are similar to those of the studies of journal literature in humanities, i.e. book represent the predominant tool for humanities scholarship and most references were more than ten years old but published since the second world war. One important exception is that manuscript reference play a greater role than journal articles. The use of dissertations and theses is negligible in both the monographic and periodical literature. The largest concentration of references fall between 1950 and 1970.[3]

Cullars (1988) in another study has attempted to determine how scholars who are native speakers of English approach writing monographs on foreign literary topics. The findings are compared with those of the earlier study of the monographic literature of English and American literature and of journal literature of the humanities. It seeks to determine the nature, the chronology, the language of the cited item etc. Scholarship concerning foreign literature has fewer outlets for publication than American or English literature. Foreign literary studies in English are predominantly published by university or other academic presses, with only the exceptional title being published by major trade presses. The principal tool of research is the recent monograph and not the journal article. Theses and dissertations are generally ignored.

The two studies indicate that selectors for research collections must apply different standards. The ever increasing tendency for major research libraries to allow their serial needs to dominate collection development must be resisted. While a core collection of journal literature is a necessity, building up of comprehensive journal collection to fulfil the needs of researchers is impossible. The most important task facing the selectors in the humanities is the

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on going acquisition of the cream of each year's new publications from the academic presses.

The study has shown that there are fewer types of American and British publishers for monographic studies of foreign literary topics than for monographic studies of English and American literature. Translations receive low priority for similar reasons. The scholars will cite the original text and some secondary sources in the language of the text, but the bulk of the remaining references will be to English language sources. Less than 2% of the references will be to sources in foreign languages other than that of the topic.[4]

Indian Studies

Literature pertaining to studies on information needs and use pattern of researchers in English language and literature in the Indian context are very scarce. In a user survey conducted by Vyas and Reddy (1983) in the American studies Research Centre (ASRC), Hyderabad with special reference to the use of periodicals, 83% scholars are found doing research in literature only. The further break up shows 75% scholars in American literature, 5% in British literature and 3% are engaged in general literature including criticism. This survey also revealed that 56% scholars reported to have found the material by wandering among library shelves, 40% by scanning periodicals, 30% scholars found the material by scanning current periodicals and 25 % scholars get the needed material in the bookshops.[5]

Vyas in further paper (1991); which is partly based on the findings of the earlier survey, gives the following inferences.

(i) the hypothesis that humanist use monographs more than journals is supported to limited extent in the case of American English literature. The importance of journals is equally high and view is supported by greater demand for photocopies of journal articles at ASRC.

(ii) Scholars use secondary sources before they come to libraries for journal literature.

(iii) Consult retrospective as well as current literature for comparative or history-oriented studies.[6]

Ayyappa Panicker (1991) states that Research in Humanities may be distinguished from research in physical, natural and social sciences on the basis of the aim and nature of investigation, the kind of methodology employed, and the special features of the hypothesis investigated or the results arrived at Research in literature cannot be expressed in the phrase 'under the same conditions' as in the case of sciences and social sciences.[7] Research in literature may not lead to the same kind of universal laws as in hard sciences. A certain degree of detachment seen unavoidable for all kinds of research, is not operative in literary research. This factor itself provides room for speculative investigation which subsequently brings non-uniformity in the results. Hence, objectivity, though an inevitable part of research, is 'affected or modified by the sensibilities and traditions that are brought to bear upon it'.[8]

Logic and truth are not as precisely applicable in literature as in scientific disciplines. 'A certain lack of logical precision operates effectively as a kind of negative capability in literary research, which makes differences in approach and results'.[9] No two researchers are likely to come out with the same conclusions about the significance of the same classical work. 'Mathematical abstraction could perhaps be a desirable goal in scientific research, it may not be so in literary research'.[10]

The use of source materials in literary research is an important aspect. Due to inadequate and unreliable sources of information, according to Ayyappa Paniker the hypothesis based on them may be turned to be wrong.[11] Gaps or errors in the selection of sources mislead the investigation and invalidate the generalization. It is not the extensiveness of secondary sources that matters, but the relevance of documented items to the topic of investigation.

Library and the Information Sources

"Libraries are books — the basic instrument of humanist enquiry is the Book."[12] The sources to be collected in a library for supporting literary research are varied today. These materials include primary sources like monographs, periodicals, manuscripts, original literary works, recordings, technical records, dissertations etc and secondary sources like bibliographies, indexes and guides, abstracts and databases etc.

The need for all editions of texts drafts and proofs is important in research. But the common forms of sources are books and journals.

(a) Periodicals constitute the most important media of communication of new ideas. It provides uptodate information of any research work. A large number of periodicals are being published in the field of English language and literature. The periodicals are published/sponsored by professional associations, institutions etc. It can be categorised either nationally, or by period, or by form, or even by being concerned only with particular writer.

(b) Theses and Dissertations are efforts of scholarship devoted to a highly specialised subject for demonstrating originality and mastery over earlier works in the same field. They are preserved only in the library of the University under whose wing the research was conducted. To trace their where about, research scholars have to consult 'Dissertations in English and American Literature, accepted by American, British and German Universities'. For language teaching the research scholar has to consult the reference: British Council. Theses and dissertations related to the teaching of English to speakers of other languages.

(c) Reports and Research projects are the indicators for researchers.

For example

Year's work in English studies.

Language and Language Teaching current research in Britain.

Ongoing research projects are available on microfiche.

(d) Books form and essential form of documents consulted by researchers in the field of English language and Literature. Monographs, Treatise, Anthologies and Collections, Literary History, Biography, Literary criticism etc are important categories of books for the researchers in this field.

Histories of the various periods of English Literature are numerous. In Walford's "Guide to Reference Material" period wise list is given. Literary History on Poetry, Drama and Novel are separately given. Literature concerning to a particular country such as' Cambridge History of American Literature' is given under Literary History. An English collection will also contain works on Literary Biography and Literary Criticism.

For general Anthology, George Bagshawe Harnson's "Major British Writers" is a useful reference. Collections for periods are also available. It is worth nothing that Anthologies are omitted by Walford in ' Guide to reference materials'.

For Biographies e.g. : -

Dictionary of Literary Biography

For Literary History e.g. : -

The Cambridge History of English Literature

For Language History e.g. : -

History of the English Language

(e) Encyclopaedias provide the basis of any enquiry. Encyclopaedia of English literature is important for the biographical and bibliographical information. A handy reference guide to the literature is the 'Cambridge Guide to literature in English'.

(f) Dictionaries are the keys to the language in which the literature is written. The honour of being the first known English dictionary belongs to Robert Cawdrey's A table alphabetical: published in 1607. They are important for any period of the English language. American English also requires the use of dictionary. Slang and bilingual dictionaries also provide information to the researchers.

For example :

(g) Year books and directories are the basis of all good reference work. They contain information section, geographical section, alphabetical and speciality indexes.

A hand book of English and Celtic studies in the United Kingdom and the Republic of Ireland.

(h) Bibliographies are the tools to assist the researcher in locating the existence, identification of a book or any document. General bibliography covering in depth the reference sources in English language and literature is the Walford's 'Guide to Reference material'.

There are also specialised bibliographies for the various periods and forms, and for many individual authors.

For example :

MLA International Bibliographies of books and articles of Modern languages and literature.

From Bibliographies of bibliographies also the researchers seek information.

For example :

A Register of Bibliographies of the English language and literature.

(i) Translation service should be capable of meeting the requirements of users for information contained in sources in other languages.

For example :

Directory of translators and translating agencies in the United Kingdom.

(j) Maps and atlases provide linguistic data, transcending language boundaries and national frontiers.

For example :

Atlas Linguaram Europe (ALE)

(k) Manuscripts include Prehistoric rock carvings and scratchings on bone and antlers, Ostraka, Painted bides, carved amulates, notched sticks, elog almananaes, bronze plaques and many other arte facts, on which men since earliest times have left a story in pictures, phonetics symbols, carved letters or hand written manuscripts. India possesses rich and enormous cultural heritage of manuscripts.

For example

American Literary Manuscripts : a checklist of holdings in academic, historical and public libraries, museums and home collections.

(l) Abstracts and Indexes are aids in searching for information on a desired item.

For example.

Abstracts of English studies Language and Language Behaviour Abstracts (LLBA) is now available through DIALOG.

(m) Review and Handbooks are an important part of literature search in English language and literature.

For example :

Review of English studies : A quarterly journal of English literature and English Language.

(n) Non book materials such as Microcard, Microfilms, Microforms, Microfiche, Audio Visual materials etc are also the sources of information. Microfilm is most suitable for recording newspapers and journals. Microfiche and micro card are most suitable for out of print books, unpublished theses etc.

In India, the Central Institute of Indian Language (CIIL) is having cassette tapes on linguistics and language teachings, Microfilms of theses, dissertations and rare books.[13] The Institute has also installed minicomputer system for information processing and retrieval.

(o) CD-ROM (Compact Disk - Read only Memory) version of the old English dictionary published by Oxford University Press and Tristar Publishing is powerful research tool.

(p) Databases is an important research tool, in American Literature.

For example :

Disclitt : American authors. Tweayne's United States Authors series and OCLC subject bibliography on CD-ROM.

The MLA international bibliography of books and articles of the Modern Language and Literature available now online through DIALOG and WILSONLINE, one of the largest bibliographic databases in the humanities, with approximately 800,000 record in the file, it provides citations to literature on linguistics, modern languages, literature and folklore published since 1965. H.W. Wilson Company now offers a CD - ROM with citations from 1981, updated quarterly.

LLBA is also available through DIALOG.

Language Teaching Materials

The British Council has made substantial contribution to English Language teaching and research. British academics are always among the leaders in English language teaching methodology and computer use.

For example :

The working languages of the European Community : a guide to learning resources.

In India Central Institute of English and Foreign Language is specialised one having enormous collections in English language teaching and literature.

Canadian Literature Source

The researchers in Canadian Literature have to consult Bibliographies encyclopaedias, Dictionaries, theses, Gazetteers, Biographies, Histories, Canadian Poetry etc. The lives and works of major authors plus OCLC electronics publishing's subject bibliographies are available on CD -ROM.

Libraries have the responsibility of interfacing the important sources of information and the users, irrespective of their variety. The vast and varied form of literature and difficulties in acquiring even the most relevant ones often place the modern librarians in a dilemma as to what should be chosen within the financial provisions.

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Case for Tribunalisation of Justice in the Higher Education Sector

Raja Mutthirulandi*

Phenomenal growth has been registered in the field of higher education in India during the post-independence period. The number of colleges, universities, teachers and students in higher education has increased several folds since 1948. Parallel to the above growth, there has also been a steady increase, especially over the past few decades, in the number of law-suits filed against educational institutions, including universities. Perhaps the expansions and diversifications witnessed in the field of higher education have simply added up to the complexities of issues involved in the scene. Or, the situation of having a noticeable increase of cases emanating from or pertaining to higher educational institutions could be taken as a reflection of changes in social attitudes in the era of establishing individuals' rights in a free and democratic republic. Whatever be the cause, the courts are frequently being invited, by the aggrieved in the higher education field, to intervene in myriad kinds of issues, such as admissions, pass-fail matters, examination malpractices of students; appointments, salary, leave facilities, transfers, promotions etc, of the teaching and non-teaching staff in the system. On all occasions of judicial interventions, ardent devotees of varsity autonomy rose to complain about their autonomy being eroded systematically. On the other hand, the constituents of higher education system — the students, teachers and non-teaching staff — voice their complaints that the universities have invariably become autocratic and arbitrary in their functioning and thus drive the constituents to the court halls. They are constrained to see remedy, through legal channels, at great cost, delay and attendant sufferings.

It is a fact that the Authorities of the Universities (the Senate, the Academic Council, the Executive Council/Board of Management/Syndicate, Boards of Studies etc) are not democratically constituted in many cases and representation to different constituents are often inadequate. A very high degree of arbitrariness, favouritism and communalism colour the decisions of the Officers and Authorities of the University system, in matters of vital importance to the constituents. Lack of experience and proper exposure to the incumbent Vice-chancellors, about the powers and functions of various authorities of the universities, often leads them to land on nullifiable decisions. It is to be admitted, with shame, that political, religious or communal patronages do help in our system in catapulting corrupt, unworthy persons to high offices in the universities and such people often delight themselves by indulging in colourable exercise of their powers and authority. To cap it all, the human touch in the administration of the university affairs, both academic and administrative, has been totally absent in the current scenario. In a situation as this, grievances accumulate quickly and serve as causes of discontent, frustration, indiscipline and violence in campuses. The formal court system, where people with grievances have to rush for remedy or relief, is, as we know, already over-burdened. Further, it is characterised by its rigidity, formalistic approach, inexpert, slow and costly justice. Apart from providing speedy justice, there is also an additional requirement of some specialisation or expertise in the sphere of adjudicating, between parties, on issues, in the field of higher education.

The advent of tribunals in the British Legal System (which we have inherited to a large extent) has been acclaimed as 'the most remarkable' arrangement in the social and administrative spheres in modern times. The Frank's Committee (1957, England) has described that the 'tribunals are characterised by their cost effectiveness, accessibility, free from technicality, expedition and expert knowledge of their particular subject'. The concept of tribunals and the practice of establishing specialised authorities or tribunals have been widely adopted in our system as is evidenced by a proliferation of such adjudicating institutions in India — the Central/State Administrative Tribunals, the Income Tax/Sales Tax Appellate Tribunals, the Railway Rates Tribunal, the Election Tribunal, the Revenue Tribunal, the Industrial Tribunal, the Debts Recovery Tribunal, the Rent Control Authority, the Workmen's Compensation Commissioner and the like, just to name a few! Some of these Authorities/Tribunals are the creations of exclusive Statutes (*The Administrative Tribunals Act, 1985 has created the Central/State Administrative Tribunals*) and some others are established as per provisions of some general statutes (*The Industrial Tribunals are established under provisions of the Industrial Disputes Act, 1947*). The higher education system needs, urgently perhaps, an adjudicating system be it in any one of the above two kinds — for speedy redressal of grievances accumulated over a period of time. By taking the wiser path of tribunalisation and by providing for the presence of members in such tribunals, from the higher

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education system also, the criticism relating to alien judges sitting in judgement over institutional issues and interfering in their autonomy could be blunted to some extent.

Successive Educational Commissions since independence and particularly the National Commission of Teachers, 1985, The National Policy on Education, 1986, The Acharya Ramamurti Committee and the most recent UGC Report of the Committee to Review the pay scales of University and College Teachers (The Rastogi Report, May, 1997) have been making direct and indirect pleas for setting up of separate grievance redressal machinery in the system of higher education. The Commission of Teachers (1985) has strongly favoured tribunalisation in higher education. The Law Commission has even proposed a three-tier system of tribunals in this sector. But nothing has happened so far.

Rastogi Report and even the Law Commission do not appear to have taken serious note of the ground realities and the prevailing climate of distrust between the constituents and the administration of universities/colleges. Their suggestion to have the grass-root level grievance redressal institution within the university system itself — as provided for in the Acts, Statutes, Ordinances etc of the universities — is unacceptable under the existing climate. Only a separate and independent institution would really help.

In the light of the above, the following arrangements are proposed by the author :

University (Education) Tribunal — UET : This would serve as the grass-root level institution for grievance redressal. UETs should be established all over the country, each UET covering the area of jurisdiction of one university in the region. All matters pertaining to higher education — involving affiliated colleges, university departments, self-financing institutions — shall be adjudicated by the UET, which shall be vested full powers of a Civil Court. The UET should have a Presiding Officer and two members. The presiding officer should be a member of the judiciary, not below the rank of a District Judge, appointed by the Chief Justice of the High Court of the State. One member should be nominated by the Chancellor from among the teachers in the university area and one more member should be nominated to the UET, by the democratically constituted senate of the University.

The State Educational Tribunal — SET : Each state should have a SET with original and appellate jurisdiction to deal with all matters relating to Government, Private-Aided, Self-financing educational institutions in the state. The SET should have a Chairman and four members. The Chairman should be a sitting or retired Judge of the High Court. The other members should be chosen as follows : One serving Vice-chancellor and one former Vice-chancellor nominated by the State Council for Higher Education. One member, from among the members of Syndicate/Executive Council/Board of Management of universities in the state, nominated by the Chancellor and one more member nominated by the Chancellor, from among teachers of repute and integrity, having special knowledge in university administration/affairs in the state. Provisions should be such that there should be no possibility of having more than one member from the same university/institution in the tribunal at any given point of time. The term of the nominated members should be two years only and there should be no provision for re-appointment in the SET. A scientific method of rotation should be followed in these nominations so as to provide equal opportunities for all regions/universities within the state to get representation in SET.

The National Education Tribunal — NET : There should be a national level institution, NET, having original and appellate jurisdiction all over the country, on matters pertaining to higher education. Like the SET, it also should have a five member bench with a Chairman and four members. The members of NET should be nominated as follows : One member, from among the Vice-chancellors nominated by the UGC; one member nominated by the Association of Indian Universities; one member (not below the rank of Secretary to Govt. of India) nominated by the Union Ministry of Human Resource Development and one member, from among teachers of repute having special knowledge on matters of higher education/university administration, nominated by the President of India. In these nominations, care should be taken to provide representation to all regions, to the extent possible, in the NET. Preference of nomination could be given to those who served well in SETs.

The suggestion of the Law Commission and Rastogi Report to exclude the jurisdiction of all courts upto (inclusive of) High Court over the decisions of UET and SET is worth of acceptance. This would help reduce unnecessary duplication in dealing with cases and also would bring finality in matters dealt with by UETs and SETs. The jurisdiction of the Supreme Court could be invoked only under very extra-ordinary circumstances, on matter of national, constitutional importance, after exhausting remedies in SET and NET. In all other cases, no appeal shall lie elsewhere after NET decides on any matter.

The suggestions contained in the aforesaid proposals aim to give adequate representation to different segments/regions involved in the system of higher education. By providing for membership of teachers, Vice-chancellors, University Administrators in the three levels of tribunals, the discontent against alien judges interfering in university autonomy is sought to be removed. The most popular legal maxim is that 'justice delayed is justice denied". In the domain of higher education, *'delayed justice is a danger to campus peace'*. The right solution in the present circumstances, warrants early tribunalisation of justice in higher education sector. ❑

Planning and Administration of Engineering Education : Some Directions for Future

·Prof. R. Natarajan, Director, Indian Institute of Technology, Chennai delivered Convocation Address at the eleventh convocation of Alagappa University, Karaikudi-630 003 on February 01, 1999. He said "Some fundamental changes are required in the planning and organisation of Engineering Education. Over the years, there have been several initiatives to modify the curricula and upgrade obsolete equipment and instrumentation. But what about administrative and management systems? We are still struggling to cope with the IT revolution; the concept of a paperless office is a distant dream. We seem to like to be submerged in a flood of paper. It is more important to safeguard against mistakes than to be innovative. It is not as if these checks and balances have prevented mis-management and maladministration. We are not in tune with modern trends. Excessive bureaucratic procedures stifle innovation, effectiveness and efficiency. The vision should be to incorporate into the Engineering Education system the curricular content relating to knowledge, skills, attitudes and orientation to enable the practising of the technological profession in inter-disciplinary and multi-cultural teams for solving problems of the global society; and to design systems and procedures incorporating the requisite flexibility and diversity to produce a "Global Engineer." Excerpts

Introduction

The twenty-first century is almost upon us; engineering students who have enrolled during the current academic year will be graduating during the twenty-first century! A wide spectrum of institutions are undertaking planning exercises to define their vision and preparation for tackling the future. While this has been prevalent for many years, the rate of change has been exponential in the recent past, drastically lowering the predictability and increasing the uncertainty. Almost every one is convinced that the future is not an extrapolation of the present or the past.

Rapid change and unpredictability are not limited to any one sector or discipline. Today's life-styles, artifacts and values would be unintelligible and unfathomable to our forefathers. Even during our own lifetimes we have witnessed such unprecedented changes; in politics, for instance, who could have foreseen such things as the unification of Germany, break-up of the Soviet Union, lifting of apartheid in South Africa, etc.

Engineering and Engineering Education have undergone significant changes in the recent past. The lead times in Education, in general, and Engineering Education, in particular, are long, and unless we plan ahead reasonably accurately, we would be unable to fulfil our obligations effectively.

Some Recent Initiatives in the Planning and Organisation of Engineering Education

There has been a rather significant change in the perceptions of Engineering Education world-wide. In our country, consequent on the introduction of the new Economic and Industrial policies, whose buzz words are liberalisation, privatisation and globalisation, a new mind-set has been created. Notwithstanding the enormous inertia characteristic of the Engineering Education System, some old concepts and practices have been replaced by new ones. Nevertheless, the response has been much weaker and slower than that of the corporate sector, for whom their very survival is dependent upon their ability to cope with change and manage it.

The new policies of globalisation are intended to integrate the Indian economy with the global economy. The significant features of globalisation include emphasis on consumer concern, such as quality, cost and variety; and encouragement of competition; quality assurance, and the need to continuously upgrade quality, and at reduced costs. There are significant opportunities for India to become the premier Production Centre of the world; for Indian corporations to enter the world markets, and become India's MNCs abroad; and to attract foreign investors to make India their home-base for their world markets. All this requires a concerted and coordinated set of initiatives from the Corporate, Engineering Education and Government sectors.

Some fundamental changes are required in the planning and organisation of Engineering Education. Over the years, there have been several initiatives to modify the curricula and upgrade obsolete equipment and instrumentation. But, what about administrative and management systems? We are still struggling to cope with the IT revolution; the concept of paperless office is a distant dream. We seem like to be submerged in a flood of paper. It is more important to safeguard against mistakes than to be innovative. It is not as if these checks and balances have prevented mis-management and maladministration. We are not in tune with modern trends. Excessive bureaucratic procedures stifle innovation, effectiveness and efficiency.

Even in academic matters, several changes are overdue. The structure and sequence of engineering curricula have not materially changed over the past 50 years: a serial and uncoordinated progression from the fundamental to the more complex. While this approach has been largely successful, there are many drawbacks. Physics, Chemistry, Calculus etc are studied much as a Physics, Chemistry or Mathematics student would study; not from engineering teachers who apply these fundamentals to engineering problems, and thus without any understanding of their relationship to Engineering. The current philosophy of Engineering Education introduces subject matter as separate courses, not as an integral part of an educational programme. It requires the study of building blocks (P-C-M) before problem-solving can be attempted. The 21st century vision should involve a change, providing strong motivation to study the broad range of subject matter required for the Future. The approach by many serious Engineering Educators is learning through real-problem-solving. This approach seems to have paid rich dividends in management education and corporate life.

The Desirable Characteristics of XXI Century Engineers

The traditional attributes of Engineers are: problem-solving abilities, analytical skills, communication skills — oral, written, graphical — ability to relate to practical aspects of engineering, inter-personal skills, management skills, decision-making skills, etc.

The XXI Century attributes will include : "Learnability: Learning to learn on one's own, yen for life-long learning -continuous education, ability to muster knowledge from neighbouring disciplines, ability to work in a team, exposure to commercial disciplines, creativity and innovation, integrative skills, international outlook, ability to employ Information Technology, ability to work at interfaces between traditional disciplines, commitment to sustainable development, adaptability and flexibility.

The Traditional and Future Concerns of Educational Planning and Administration

The traditional concerns of Educational Planners and Administrators were : Conformity: Curricular Contents; Faculty development; Uniformity/Standardization; Extrapolation of past; Procedure-driven; Quantitative expansion; Command and Control; Resource Crunch; Examinations.

The future concerns are expected to include : Resource mobilization; Market Forces; User-oriented Research; IPR; Quality, Excellence, Relevance; Internationalization; Education Delivery Systems; Distance Education; Virtual University; Digital Libraries; Continuing Education; Innovation; Employment Potential; Autonomy; Flexibility; Strategic Planning and Management; Articulation of Mission, Vision, Objectives; Continuous improvement; Performance Evaluation; Educational Technology; and Internet connectivity.

Concerns for Quality in Higher Education

While Quality Assurance has always been matter of concern and significance in education, in general, and in professional education such as technical education in particular, the recent quantitative expansion of an unprecedented nature has caused educators to devote careful attention to the quality aspect. There already exist several regulatory mechanisms for ensuring minimum standards before an Institution is started. However, quality assurance entails an assessment of the performance of the Institution in delivering education of the prescribed quality.

The corporate sector has universally recognized the importance of quality in their products and services for a achieving and sustaining competitiveness. The Engineering Education sector has been slow to act. We must recognize the role of quality in achieving our identified Mission and Vision.

Quality perceptions depend to a large extent on the particular sector or group that is considered. Such perceptions are indicated below :

- National Funding Agencies.
- Education for largest number at minimum cost.
- Educational Administrators.
- Image and Reputation of their institutions.
- Faculty.
- Student Learning and Satisfaction.

Barnett has classified Quality perceptions into three groups :

Objectivist Perception :

Identification and Quantification of Inputs and Outputs.

Inputs : Faculty, Physical Resources, Students, Funds.

Outputs : Students Learning, Failure rates, Results, Employment Patterns, PG education, R&D.

*Relativist Perception :

Examination of "fitness for purpose" Different stakeholders have different foci :

Students : Educational Process

Employers : Work output of Graduates

Professors : Research

* Development Perception :

Exists within the Institution, not imposed from outside.

TQM culture promotes achievement of Quality through this approach.

i) Implications of TQM for Engineering Education in the Future

The NSF Task Force on TQM has come up with the following definition of Quality Engineering Education :

* "Quality Engineering Education is the development of intellectual skills and knowledge that will equip graduates to contribute to Society through productive and satisfying engineering careers as innovators, decision-makers and leaders in the global economy of the XXI Century"

* "Quality Engineering Education demands a process of continuous improvement of and dramatic innovation in Student, Employer and societal satisfaction by systematically and collectively evaluating and refining the system, practices and culture of Engineering Education Institutions."

The Task Force points out that TQM is not a destination, but rather a journey to improvement.

The Task Force has also examined the nature of the Customer of Engineering Education. It preferred to deal with the concept of "Stakeholders", which could vary widely depending on an Institution's mission, goals, strategies and tactics. The stakeholders include suppliers, such as high schools, and receivers, such as employers and students.

ii) Is Academic Quality Quantifiable?

There have been several discussions on this fundamental question. It is widely believed that academic quality, like Beauty, for example, is an elusive characteristic. Robert Pirsig has resorted to much verbal gymnastics in coming to terms with Quality :

* "Quality ...You know what it is, yet you don't know what it is. But that is self-contradictory. But some things are better than others; that is, they have more quality. But when you try to say what the quality is, apart from the things that have it, it all goes proof".

A recent Ad proclaimed : "Quality needs no definition, you recognize it when you see IT".

Quality is a complex, multidimensional entity, no doubt; but so are many other things of significance, and we have to deal with them; such as, for example, Development, Growth, Excellence, Democracy, Religion.

Two quotations are given below to bring out the need for quantification, and simultaneously the limitations of this approach :

* Lord Kelvin : " When you can measure what you are speaking about, and express it in numbers, you know something about it; and when you cannot measure it in numbers, your knowledge is of a meagre and unsatisfactory kind".

* G. N. Lewis : "I have no patience with attempts to identify Science with measurements, which is but one of its tools, or with any definition which would exclude a Darwin, a Pasture or a Kekule".

The Nature and Scope of Accreditation

The dictionary meanings of Accreditations are : official recognition; guarantee of quality; general acceptance.

The primary purpose of Accreditation is to ensure quality control and quality assurance, commonly with reference to certification system in the areas of education, training, testing, etc.

In some countries, this function is performed by an agency of the Ministry of Education, while in several industrialized countries it is undertaken by a confederation of voluntary agencies or professional societies. In our country, we do not yet have an umbrella organization confederating a majority of professional societies. There are several quality control mechanisms (inspection), however, in place; such as, for example, university affiliation, recognition by professional societies, such as the Institution of Engineers, AICTE approval for starting and continuing programmes. However, there are several differences between the functions of Inspection and Accreditation.

The basic process inherent in

Accreditation is Evaluation or Assessment of the different sub-systems and component processes. There are two parts to it : critical self-assessment and external peer review. The former is performed by the faculty as a part of the support materials, and, if carefully and effectively done, can be a valuable strategic tool. Apart from collection and analysis of the data, the following questions should be posed and answered

- "What are our goals, aims and objectives? Are they clearly stated? Are they useful? Why do we do what we are doing? Does consensus exist on the interpretation of goals, aims and objectives?
- Is the Programme designed in the context of the realisation of the goals?
- Is the Programme functioning properly? Are we monitoring and controlling the input, the process and the output?
- Do we have the right performance indicators?

The outcome of the self-assessment must lead to improvements, and, if necessary, to reformulation of the goals.

Some Future Directions for Engineering Education Impacting on Accreditation

- Engineering practice today has changed dramatically and irreversibly, due to : growing global competition, and the subsequent restructuring of industry; explosion of information; developments in IT.
- Engineering success today requires more than up-to-the-minute technical capability : ability to communicate; work in teams; think creatively; learn quickly; value diversity.

We need a new instructional paradigm with new standards, and new ways of assessing those standards. Internal or institutional assessment by itself does little to convince the public of an institution's ability to provide quality education. External accountability or accreditation can inform the general public and peers.

Some Positive Consequences of Accreditation

There are several positive consequences of Accreditation — for the Institution, for the faculty, students and staff, for the parents of students, for the University administrators and for the general public. The accreditation criteria define the nature and scope of prerequisites for Institutions imparting Technical Education, and the profile of a good Institution. For instance, since the criteria demand that every Institution have a Mission and Goals, Industry-Institute Interaction, and Research and Development , we have seen Institutions strive to satisfy theses requirements. Accreditation also promotes awareness and replication of good practices (as in the case of Energy Conservation and Environmental Protection).

The Strategic Planning and Quality Assurance Initiatives at IIT-Madras

Beginning in 1996, IIT-Madras has embarked on two initiatives, one for the evolution of a Strategic Plan and the other of ISO-9001 certification. In this process, a Quality Policy for the Institute activities has been generated, essentially through a bottoms-up decentralised approach :

- Impart Quality Education in Technology and Science for Professional Excellence and Instill Commitment to Sustainable Development.
- Perform World Class Research to advance the Frontiers of Knowledge.
- Provide innovative Solutions through Research, Consultancy and Continuing Education for Satisfying Current and Future Industrial R&D Needs.
- Extend Expertise towards Improvement in the Quality of Technical Education.
- Achieve Excellence in the support Services of the Institute through Continuous Improvement and Teamwork.

At the moment the Strategic Plan is getting ready and the Mission Statement for the Institute is being evolved, again through Institute wide participation. Six units of the Institute have been assessed by TUV Auditors, and recommended for ISO-9001 certification.

The Importance of Innovation

Innovation is increasingly being recognized as the key to industrial and economic competitiveness. Innovation stands for new products, information, knowledge and services. It stands for Renewal; recreating oneself. It requires Imagination and Insight. It is more than just invention and marketing; it should extend the realm of possibilities of the organization and its people. It implies "thinking beyond traditional boundaries". One creative artist explained : "Creativity is in that which I do, and not in me". There is also no proven scientific theory about Creativity or Innovation.

It is frequently observed that the same creative individuals will be more creative in certain environments than others. A case in point is that three of 'our' recent

Noble Prize Winners : Chandrasekhar, Khurana and Amartya Sen, were awarded the coveted honour in recognition of work done abroad, not in India. Our high-quality manpower which prefers to go abroad to pursue their professional careers, characterized as Brain Drain, cite the lack of a challenging and fair work environment as the principal 'push factor' for their decisions. It is pointed out that the demanding environments abroad provide : a strong focus; a general awareness of new ideas; an open atmosphere for discussion; and a healthy balance between individual competition and social cooperation.

Barriers to Innovation — With Special Reference to our Country :

Country-Specific Barriers

- Lack of consistent and sustained policy support
- Lack of sincerity of purpose and transparency
- Tradition of rote learning
- Technology is alien to the majority of the population
- Ideological hang-ups
- Gap between public announcements and practices
- Lack of entrepreneur-friendly ambience
- Too much reliance on routine jobs.

Education-Specific Barriers

- Too much regimentation and rote learning
- System aimed more at solving social equity problems than at nurturing merit
- No specific efforts to promote Creativity and Innovation.
- Acute scarcity of motivated, committed and trained teachers.

Industry-Specific Barriers

- Lack of self-confidence - in Indian academic and industry capabilities
- Product volumes too small to afford investments in innovation promoting activities
- Industry is largely oriented to domestic markets and not to export markets
- While India has a large body of educated and trained manpower, the extra bit required to create innovation products is lacking
- Indian Industry is pre-occupied with problems of infrastructure, raw materials, cash flow, procedures, bureaucracy, politics.

Internationalisation of Higher Education

The international setting for universities and higher education is changing rapidly, both economically and socially. The globalization of economy has led to more international practices and approaches to higher education. The International dimension of higher education has assumed significance for both external and internal considerations. The external factors include languages, cultures and business methods. It is believed that emphasis on multiculturism and diversity in curricula is important preparation for working in an economy without borders.

More important than global contexts appear to be the regional groupings of countries, such as the European Union (EU), North American Free Trade Association (NAFTA), Asia Pacific Economic cooperation (APEC), the Nordic Countries, etc.

The traditional internationalization of higher education included individual student mobility (5-10%), mobility based on institutional agreements and internationalization of academic content and processes. In the emerging scenario, internationalization has become the concern of mainstream educational planning and management. The OECD Centre for Educational Research and Innovation has defined "international curricula" as those with "an international orientation in content, aimed at preparing students for performing professionally and socially, in an international and multicultural context; and designed for domestic students and/or foreign students".

Internationally trained professionals are able to address cross-border and global problems from an international and inter-disciplinary perspective, and to work with people from different national and cultural backgrounds.

The types of degrees awarded range from double degrees, wherein two degrees are awarded simultaneously but separately by the two institutions, two joint degrees, wherein a single degree is awarded by two (or more) institution for a joint programme.

For the success and sustainability of international programs, the following factors are essential :

- Strong innovative leadership to provide the impetus for change
- Resources to be provided by the institution, preferably reinforced by national budget allocation and policy framework.

- Strong staff involvement and commitment.

Internationalization must involve active participation by stakeholders from the government, private sector, community, and voluntary organizations.

A Vision for Globalisation of Engineering Education

It is proposed that the Vision should be to incorporate into the Engineering Education systems curricular content relating to knowledge, skills, attitudes and orientation to enable the practising of the Technological Profession in inter-disciplinary and multi-cultural teams for solving problems of the global society; and to design systems and procedures incorporating the requisite flexibility and diversity to produce a "Global Engineer".

In order to facilitate the achievement of this Vision, the following recommendations are suggested :

- Sharing of information and experiences between different universities on the different models practised by them;
- International consultation and collaboration between : Government agencies responsible for Technical Education (e.g., All India Council for Technical Education in India and other similar agencies in other countries); Professional Societies concerned with Engineering Education (e.g. American Society of Engineering Education, Indian Society for Technical Education); and Accreditation Agencies (ABET, National Board of Accreditation, etc).
- Undertaking international benchmarking through an international agency.
- Rationalization of fee structure for international studies and students.
- Involvement of Multi-national Companies and Industries.
- Improvement of infrastructural facilities needed by international students in the universities of developing countries.

The Knowledge Basis of Industry and Business

It is estimated that one in every 3 or 4 gainfully employed persons work with knowledge — intensive technologies in industrialized countries. Increasingly, traditional manufacturing jobs are being replaced by new occupations in software engineering, services and consulting. In Siemens, for example, 50% of value added stems from knowledge-intensive services. In IT or telecommunications, in which the product cycles are particularly short, the share of knowlege-intensive value added is considerably higher. The ratio of hardware to software on the world IT market has shifted from 51:49 to 41:59 in 10 years. Today, a new chemical formula is discovered every minute, a new physical relation every 3 minutes, and a new medical finding every 5 minutes. More information is printed everyday than in the entire period between the invention of printing and World War-I

As our knowledge expands, two key factors come to the fore :

- Our capacity to find our way through this material, to identify and define problems, and to absorb knowledge in focused manner.
- The technical means needed to obtain access to all this knowledge quickly, precisely, and in a manageable form.

Today's employees are responsible for managing knowledge themselves. They have to both acquire and apply knowledge in parallel throughout their working lives. We have to change the established sequence :

- first taking a degree to acquire knowledge,
- then finding a career in which to apply it.

We need to establish a culture of life-long learning. There can no longer be any way of completely acquiriing all the knowledge in a given area of specialization. Rather, the focus must be on acquiring a basic store of knowledge that facilitates the assimilation of the relevant parts of a specialized field at a later stage. We require need-based education and training; very much like the just-in-time concept in manufacturing, we need it in education and training also.

The requirements of the new knowledge society are :

- Ability to organize knowledge-base.
- Provide high-speed access to large amount of it.
- Select and prepare it.

Conclusion

Particularly, since the lead times are long in translating plans and policies into practice in education sector, and since the world of work and employment changes much more rapidly, it is very important that Educational Planners and Administrators undertake manpower planning, both in terms of numbers and types. In addition, it is desirable to build in flexibility, so that the response to sudden changes can be handled successfully. ❑

KARNATAKA STATE OPEN UNIVERSITY

MANASAGANGOTRI, MYSORE-570 006

Ph : 0821-519948, 519941, 519943, 515405, 519952

ADMISSION NOTIFICATION - YEAR 1999-2000

Applications are invited for admission to the following Programmes of Study offered by this Open University for the Academic Year 1999-2000

ADMISSION MADE UNDER REGULATIONS-I & II

Regulation I : No educational qualification is required. Candidates who have completed 18 years of age as on 1.7.1999 are eligible for B.A./B.Com. Candidates who have completed 21 years of age as on 1.7.1999 are eligible to apply for M.A./M.Com.

Regulation II : Candidates who have passed Two year P.U.C. or its equivalent examination (10+2) are eligible to apply for B.A./B.Com and also for post P.U.C. Diploma in Kannada and Journalism. Graduates who have studied the cognate subject at the Degree level are eligible to apply for M.A./M.Com. and any Graduate is eligible to apply for PG Diploma in Marketing Management, Human Resource Management & PG Diploma in English. Candidates who wish to apply for M.Ed./M.B.A. should fulfil the required qualification mentioned in the prospectus.

ADMISSION MADE UNDER REGULATION - I & II (SL. NO. [illegible])

Sl. No.	Programmes Offered & Duration	Eligibility		Cost of Prospectus
		Regulation-1	Regulation-II	
	GRADUATE & POST GRADUATE COURSES			
01.	B.A./B.Com. DURATION : 3 YEARS	Candidates who have completed 18 years of age as on 1.7.1999	P.U.C. or 10+2 or equivalent	Rs. 100
02.	M.A. IN ENGLISH/KANNADA/HINDI/SANSKRIT/URDU/ POLITICAL SCIENCE/HISTORY/SOCIOLOGY/ECONOMICS DURATION : 2 YEARS	Candidates who have completed 21 years of age as on 1.7.1999	Graduates who have studied the cognate subjects at the Degree level	Rs. 200
03.	M.Com. DURATION : 2 YEARS	Candidates who have completed 21 years of age as on 1.7.1999	B.Com/B.B.M. Graduates	Rs. 200
	ADMISSION MADE UNDER REGULATION-II ONLY (SL. NO. 4 TO 8)			
04.	M.Ed DURATION : 2 YEARS	B.Ed. Graduates with 50% marks (45% for SC/ST)		Rs. 200
05.	M.B.A. DURATION : 3 YEARS (Commences from Nov. 1999)	1. Graduates with 50% marks (45% for SC/ST-Graduates) or any Graduate with 3 years job/work Experience 2. Admission based on Entrance Test		Rs. 300
06.	POST-GRADUATE DIPLOMA i) Marketing Management ii) Human Resource Management iii) English	 Duration : 1 Year Duration : 1 Year Duration : 1 Year	 Graduates Graduates Graduates	 Rs. 100 Rs. 100 Rs. 100
07.	POST-PUC DIPLOMA i) Post P.U.C. Diploma in Kannada ii) Post-P.U.C. Diploma in Journalism	 Duration : 1 Year Duration : 1 Year	 P.U.C. or 10+2 equivalent P.U.C. or 10+2 equivalent	 Rs. 100 Rs. 100
08.	CERTIFICATE PROGRAMME In Kannada for Non-Kannada speakers (In Hindi or English Medium)	Duration : 1 Year	S.S.L.C. or equivalent	Rs. 100
09.	B.Ed. AND M.Phil. PROGRAMMES : SEPARATE ADMISSION NOTIFICATION WILL BE ISSUED IN THE NEAR FUTURE, IF NEED BE.			

Note : (1) Separate prospectus-cum-application form is available for all programmes. (2) Candidates who wish to apply for any of the programmes shown above, should mention the name of the Programme on the covering letter enclosing a Demand Draft as required above with clear Postal Address. (3) Payment made through Money Order/IPO or cheques will not be accepted. Prospectus will not be sent by V.P.P. (4) University will not take any responsibility for the cash sent through postal envelopes. (5) **Prospectus will be sent by Registered Post Only.** (6) Applications received after the due dates are liable to be rejected. University will not take cognizance of postal or any other delay. (7) Appliactions may be obtained by sending a Crossed Demand Draft taken in favour of **"Karnataka State Open University Account No. 8, Manasagangothri, Mysore-570 006"** through any nationalised bank or **by Payment of Cash at the University Office or at the nearest Study Centre.**

Please Note : (I) Prospectus-cum-application form will be available from 23rd July 1999 in the following Study Centres of Karnataka State Open University : (01) Govt. Arts College, BANGALORE (02) Govt. R.C. College of Commerce, BANGALORE (03) K.G.F. 1st Grade College, Oorgam, KGF. (04) Govt. Arts College, B.M. Road, TUMKUR (05) Govt. Arts College, HASSAN (06)Govt. Boys College, MANDYA (07) Govt. Arts College, CHITRADURGA (08) Acharya Tulsi National College of Commerce, SHIMOGA (09) Dr. B.M. Thippeswamy Memorial Composite PU College, MCM Complex, P.J. Extension, DAVANGERE (10) Veerashaiva Arts, Science & Commerce College, BELLARY (11) Lingaraj College, BELGAUM (12) J.S.S. Arts & Commerce College, Vidyagiri, DHARWAR (13) Seva Bharathi First Grade Women's College, CHAMARAJANAGARA (14) Govt. Arts & Science College, KARWAR (15) Sri Basaveshwara Vidyavardhaka Sangha Arts College, BAGALKOT (16) Dr. Ambedkar Arts & Commerce College, Darga Road, GULBARGA (17) MGM College, UDUPI (18) Karnataka Arts & Commerce College, BIDAR.

Send the application, Fee paid challan, etc directly to the Principal & Co-ordinator of your nearest Study Centre or to the Deputy Registrar (Academic), Karnataka State Open University, Manasagangothri, Mysore-570 006. (II) Incomplete application not fulfilling any of the requirements will be summarily rejected (III) Applications sent through the Tutorials/Private Agencies will not be entertained. (IV) **SPOT ADMISSION :** Further, the University will make arrangements for Spot Admission for B.A./B.Com., & M.A./M.Com., Diploma & Certificate programmes **from 23rd to 26th August 1999** in all the above Study Centres. The candidates who desire to seek admission should bring the necessary fee & documents along with the filled-in-application at the time of Spot Admission. During the Spot Admission, Identity Card, Study Material & Schedule of Academic counselling will be issued.

Note : Also look for advertisement in Newspapers for
DISTANCE EDUCATION PROGRAMMES starting from JANUARY, 2000

LAST DATE FOR ADMISSION / APPLICATION WITHOUT PENALTIES [illegible] 26TH AUGUST 1999
LAST DATE FOR ADMISSION / APPLICATION WITH PENALTY [illegible] [illegible] SEPTEMBER 1999

REGISTRAR, KARNATAKA STATE OPEN UNIVERSITY, MYSORE-570 006

CAMPUS NEWS

Total Quality Management in LIS

Library & Information Managers (LIM) are these days deluged with advice as to how to acquire and organise learning resources and satisfy the complex and ever increasing information needs of their users. However, to achieve their goal, the question of a resource constrained regime has to be kept in mind without sacrificing the interests of the users. The services offered, accordingly, have to be internally efficient and externally effective. It is in this context that the question of 'Total Quality' becomes relevant in the 'Management' of 'Library & Information Services'.

Keeping with this scenario the Indian Institute of Management, Lucknow, announces a programme on 'Total Quality Management in Library & Information Services' from October 11-13, 1999 at IIM Campus, Lucknow. The present programme is designed to equip the participants with adequate knowhow so that they are able to : gauge the requirements of their clients, i.e. the library users more accurately and precisely; cater to the exact needs of such users; and remain cost effective in every area of operation by doing things right the first time, everytime, all the time.

The programme is designed around the following themes :

Developing total quality management (TQM) as a strategic focus to effect continuous improvement in various activities and services of a modern library and information centre (LIC) encompassing acquisition, organisation and dissemination of information.

Understanding the TQM process.

Barriers to continuous improvement in the context of library and information services (LIS).

Making continuous improvement a way of life for everyone involved in LIS in any organisation.

The programme is aimed at senior level librarians and information managers interested in enhancing a range of their library operations, products and services. Senior managers involved in information storage, retrieval and dissemination will also benefit from this programme.

For any other details, please write to the Programme Director on the following address : Dr. Roshan Raina, Librarian, Indian Institute of Management, Prabandh Nagar, Off Sitapur Road, Lucknow-226 013 (India), Phone : (0522)361891 to 361897 (7 lines), Gram : MANAGEMENT, Fax : 0522-361843 and 361840, E-mail; roshan@iiml.ac.in

National Seminar on Vibrational Spectroscopy

A two-day National Seminar on 'Recent Trends in vibrational spectroscopy' sponsored by UGC, CSIR, TNSCST and DRDO was recently organized by the Post Graduate Department of Applied Physics, Nehru Memorial College, Puthanampatti-621 007, Tamil Nadu. The Seminar was inaugurated by Professor P.T. Manoharan, ES-CSIR, IIT Chennai and former Vice-Chancellor of University of Madras. During his inaugural and keynote address he emphasized casteism and political interference and said that the universities should be ridden of these things to ensure bright future for academic activities. He also pointed out the relevance of Raman spectroscopy even in today's modern research. Professor M. Ponnambalam, Secretary of the college presided, Dr. S. Ramalingam, Principal welcomed the gathering. Nearly 120 participants from all parts of the country took part in the deliberations of the two days National Seminar. 45 Research papers were presented in the oral and poster session of the seminar. Professor C. Santhamma, Andhra University released the proceedings of the seminar. Dr. M. Mylrajan, IIT, Chennai explained the applications of vibrational spectroscopy to Bio-molecules. Dr. Unnikrishnan Nair, University of Kerala, Thiruvananthapuram gave a detailed talk on phase transitions in crystals. Professor S. Mohan of Pondicherry University discussed the Renaissance of IR and Raman Spectroscopy. Dr. K.S. Viswanathan, Scientist, IGCAR, Kalpakkam demonstrated the hydrogen and vander walls bonding in inert gas systems. Laser and its industrial applications was narrated by Dr. S. Manoharan of WRI, BHEL, Trichy. Dr. A.K. Rai of G.B. Pant University of Science and Technology, Pant Nagar (UP) explained the uses of photo acoustic spectroscopy for the early detection and diagnosis of plant diseases.

Professor. P. Jagadeesan, Vice-Chancellor, Bharathidasan University, Tiruchirapalli felicitated the efforts taken by the organizers to conduct the national seminar in the rural areas. Dr. V. Krishnakumar, Convenor of the seminar proposed vote of thanks.

Mahamana Sacred Heritage Complex

The Malaviya Bhawan, one of the buildings in the Banaras Hindu University is named after Pt. Madan Mohan Malaviya and perpetuated as cultural Heritage. It is the house where he lived. Pt. Madan Mohan Malaviya founded the university in 1916 and dedicated his life to give it a shape. To renovate the building and evolve it as a complex.

The Banaras Hindu University Vice-Chancellor Prof. Y.C. Simhadri had constituted a committee named the Mahamana Sacred Heritage Complex Committee under the chairmanship of the Executive.Councillor Prof. K.D. Tripathi and some of the outstanding citizenary of Varanasi. The committee decided in a meeting that the complex should comprise beside the extended Malaviya Bhavan, a befitting memorial to Mahatma Gandhi and poet laureate Ravindra Nath Tagore.

Addressing the gathering the Vice-Chancellor Prof. Y.C. Simhadri said that the Indian renaissance started in early twentieth century, was instrumental in the establishment of BHU, which helped greatly in the reconstruction of the country. Whereas Gandhi was leading the freedom movement, Tagore was creating a new literary ethos and culture. The same role was played by Mahamana in the field of new education for the country. It is a great coincidence that these three superman were not only instrumental in creating this campus but there are buildings here, where they stayed during their visit. Therefore it has been proposed to perpetuate this cultural heritage here. The result is Mahamana Sacred Heritage complex. It is also proposed that different activities will be organised in these Bhavans. A research centre would be set up to coordinate these activities. Sound and light programmes would be held. It is also desired to start a reception room near the main gate depicting the various facets of the university.

The honorary Director of the Malaviya Bhavan Prof. Ram Harsha Singh suggested that a Malaviya Pillar should be constructed somewhere in the Malaviya Bhavan. It is also imperative that renovation of all these three buildings should not be postponed further. Keeping in view the requirements of the university an auditorium adjacent to Malaviya Bhavan should be constructed. The children park in the Malaviya Bhavan should be enlarged. The former president of the BHU Teachers' Association Prof. Deepak Malik was of the view that the debt owed by the university to the Indian renaissance, could be redeemed to some extent through building up this heritage complex.

Recent Development in Adult Education

Jawaharlal Nehru University, New Delhi (JNU) Adult Education Unit is reported to organise a four-day Orientation Course on 'Recent Development in Adult Education' for a group of 35 lecturers and doctoral students from JNU, Delhi University, Jamia Millia Islamia, IGNOU, and District Resource Unit, some time ago. The course was jointly planned and organised by the Departments of Adult Education of JNU, DU and Jamia as per the UGC guidelines on adult continuing education. The course was transacted through panel discussions, video presentations, special lectures and field visits with the help of faculty drawn from JNU, State Resource Centre, Jamia and other institutions.

Diploma in MIS and Computers

Osmania University is reported to offer a three term full-time Postgraduate diploma in Management Information Systems and Computer Applications at the university campus and 41 other affiliated colleges.

Seminar on Venture Agrobiotechnology

Thapar Centre for Industrial Research & Development and Thapar Institute of Engineering & Technology (Deemed University) Patiala are jointly organising a seminar on Venture Agrobiotechnology during September 24-25, 1999. It is co-sponsored by Council for Scientific & Industrial Research, New Delhi and University Grants Commission, New Delhi.

The seminar aims at providing excellent forum to review the state of art, assess potentials and identify bottlenecks in the growth of emerging eco-friendly technologies for Agrobiotech business.

Technical sessions will focus on following areas covering prospects and potential for commercialization and identify critical constraints through invited and contributed papers in oral and poster sessions. The seminar will also address trade barriers and issues on intellectual property rights.

- Biofertilizers
- Biopesticides

- Bioconversion of solid wastes
- Bioremediation

Personnel in academia, R&D institutions and the industrial sector are eligible to participate in the seminar.

Delegates can register for the seminar by sending completed forms on or before August 25, 1999. Abstracts of papers not exceeding 200 words related to any of the focal area may be sent alongwith the registration. Intimation for the acceptance of the paper will be sent by September 5, 1999.

For further details contact Dr. Dinesh Goyal, Biotechnology Division, Thapar Centre for Industrial Research & Development, Post Box No. 68, Bhadson Road, Patiala-147 004. Phone : (175) 393738, 393733, Fax : (175) 212002, 212012, email : dg@tcrdcpt.ren.nic.in

News from Abroad

Universities in the United States

University of Maryland Eastern Shore

University of Maryland Eastern Shore (UMES) is predominantly a research and teaching university. Graduate degrees are reported to be offered in the following fields : Marine — Estuarine Environmental Sciences (M.S./Ph.D) (2) Toxicology (M.S.Ph.D) (3) Applied Computer Science (M.S.) (4) Agriculture and Extension Education (M.S.) (5) Food and Agricultural Sciences (M.S.) (6) Guidance and Counselling (M.Ed.) (7) Teaching (M.A.T.) (8) Physical Therapy (M.P.T.). UMES is accredited by (1) The Regional Accreditation Agency (2) the Middle States Association of Colleges and Schools. UMES also has professional accreditations applicable to its graduate programmes in physical therapy and also in education. Most programmes in UMES do not require GRE. But GRE score is considered an additional qualification. Applicants must write to the department of their interest to find out the exact requirement. TOEFL is a must for all the applicants whose mother-tongue is not English. The score should be 550 and more. The Graduate Studies Office releases annually, assistantship stipend amounts for each succeeding academic year. Tuition per credit hour is $253 for non-residents. Other fees required may be about $150.

For details contact : The Graduate School Office, The University of Maryland Easternshore, 2104 J.T. Williams Administration Building Princess Anne, Maryland 21853-6080 U.S.A.

Bradley University

Bradley University (BU), founded in 1897, celebrated its 100th anniversary two years ago. The Graduate School at BU started offering graduate programmes in 1946. The following colleges are reported to offer various programmes and master's degrees : (I) Foster College of Business Administration : (1) Business Administration (M.B.A.) (2) Accounting (M.S.A.) (II) Slane College of Communications and Fine Arts : (1) Ceramics (M.A. & M.F.A.) (2) Painting (M.A. & M.F.A.) (3) Photography (M.A. & M.F.A.) (4) Printmaking (M.A. & M.P.A.) (5) Sculpture (M.A. & M.F.A.) (III) College of Education and Health Sciences : (1) Nursing Administration (M.S.N.) (2) Nurse Administered Anaesthesia (M.S.N.) (3) Counselling (M.A.) (4) Curriculum and Instruction (M.A.) (5) Leadership in Educational Administration (M.A.) (6) Leadership in Human Service Administration (M.A.) (7) Learning Disabilities (M.A.) (8) Physical Therapy (M.P.T.) (IV) College of Engineering and Technology : (1) Civil Engg. (M.S.I.E.) (2) Electrical Engg. (M.S.E.E.) (3) Industrial Engg. (M.S.I.E.) (4) Manufacturing Engg. (M.S.E.E.) (5) Mechanical Engg. (M.S.I.E.) (V) College of Liberal Arts and Sciences : (1) Biology (M.S.) (2) Chemistry (M.S.) (3) Computer Science (M.S.) (4) Computer Information Systems (M.S.) (5) English (M.A.) (6) Liberal Studies (M.L.S.).

The U.S. Immigration and Naturalisation Service (INS) requires universities to have documented proof that an admitted student has sufficient financial support for the length of the programme of study before issuing, the Certificate of Eligibility (1-20). Estimated annual expenses are : Tuition and fees : $8,200 (2) Health Insurance : $300 (3) Books and Supplies : $500 (4) Living expenses : $600 (5) Miscellaneous : $1,500. Total : $16,500. These costs are subject to change without any notice.

TOEFL is a must with a minimum score of 550. Certain programmes require GRE and GMAT scores. Minimum conditions for unconditional admission are overall undergraduate grade point average of at least 3.5 on a 4.0 scale, a minimum TOEFL score of 550. The Graduate School offers teaching, research, and administrative assistantships to full-time students.

For details contact : Graduate School, 118 Bradley Hall, Bradley

University Peoria, Illinois 61625
U.S.A.

EXPO 2000
Shaping the Future

EXPO 2000 is most likely to be the biggest event of the year and is expected to attract 40 million visitors. This world exposition in Hanover/Germany will also be the platform for an international academic forum for graduates and young researchers. Successful candidates will be invited for 30 days during EXPO 2000 to submit their work on innovations, new strategies and possible solutions for the next century. Projects are invited on the following subject fields :

Humankind : Humankind and Society; Mind and Body; Humankind and Technology.

Environment : Landscape, Climate : Humankind and environment; Climate and nature conservation; Sustainable resource management

Nutrition : Transcultural nutrition concepts; Ensuring the food supply; Food Production

Health : Transcultural health concepts and practices; Emerging and re-emerging infections diseases; Virtual reality and telematics optimising health

Information and Communication : Basic technologies; Multimedia tools and services; Tele-communication systems

Mobility : Humankind and mobility; Mobility and nature; Maintaining mobility

The future of work : Work and society, Work and globalisation; The workplace

Energy : Energy sources; Energy supply systems; Energy application.

Last date for submission of papers is September 30th, 1999; age limit is 35 years.

More information is available with German Academic Exchange Service, DAAD 176, Golf Links, New Delhi-110 003, daadnd@del2.vsnl.net.in or info@shaping-the-future.de

News from UGC

Countrywide Classroom Programme

Between 23rd to 31st August, 1999 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 9.30 to 10.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 6.30 a.m. two days a week i.e. on Saturdays and Sundays. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays only.

Hindi Programmes are being telecast on Mondays to Fridays from 6.00 to 6.30 a.m.

23.8.99
"Chem Fun-10 : Absorption"
"Parallels in Geometry"
"Geometrical Transformation : 3 Reflection"
"The Butterfly Effect"

24.8.99
"Sanctuary for Endangered Wildlife"
"Vedanthangal : Winter Heaven for Birds"
"Catalytic Converter — A Hope for Green Air"

25.8.99
"Body Building Basics-1"
"Touch of Genius"
"Training Dogs"
"Tulsi : From Worship to Cure"

26.8.99
"The Tree Grass"
"Hibiscus Rosa Sinesis"
"Question Time-119"
"Are We Kind Enough"

27.8.99
"Perspective in Modern English Literature-Modern Poetry-I The Poetry of Nature"
"Special Effects in Photography"
"Touch of Genius"

28.8.99
"Dances in India — Odissi Dance-2"
"New Vistas in Carnatic Music"
"Secrets of Science : Earth's Driving Forces"
"Today's Health-110"

29.8.99
"Moradabad Metal Ware — A Shining Example"
"The Carpet"

30.8.99
"Chem Fun-11 : Surface Tension Floating Needles"
"Polymer — A Scenario of Origin"
"Geometrical Transformation-4 Rotation
"Bertrand Russell — A Champion of Rationality"

31.8.99
"Coleridge's Lament"
"Why are Plants Worshipped : The Myth & The Truth"
"Towards Better Health Fly Control"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

24.8.99
''हिमालयी पर्वतीय वनों की परिस्थितिकी-1''

BOOK REVIEW

Focus on Research Needs in Distance Education

K.K. Bajaj*

Murli Manohar K. (Ed.) Distance Education : Theory and Practice — Prof. G. Ram Reddy Commemorative Volume 4, Distance Education Research in India. Hyderabad, Open Learning Society, 1996. Pp. 240, Rs. 250/-.

Distance Education is now known for its flexibility and multifaceted extended reach to the left out. It has expanded fast and has established its credibility through its innovative approach and quality. While its institutions have multiplied and its enrolments have grown multifold it is still not a dynamic and prestigious channel of education and is believed by many to be an alternative to formal education. Though there has been a spurt in articles and books on it during the last over two decades, yet our concern for developing a critical attitude towards the understanding of its different issues and challenges has rather been casual. Recent popularity of the Open University system has brought certain important issues and demands centre stage yet the critical insight that could be available through empirical studies and research orientation continues to be generally scattered. This has largely been due to lack of professional training for course providers, and inputs for distance education system and any sponsored research into its diverse problems.

The book under review is the fourth volume brought out in memory of Professor G. Ram Reddy who had rendered a significant service in promoting distance education throughout the world. He believed in its dynamic character and supported all initiatives aimed at its renovation for relevance for which he encouraged research orientation to improve its strategic inputs. The editor of this book has collected nine essays from a broad range of authors and has placed them in three interrelated compartments of review of research and future perspective. The opening section contains a survey of Indian writings by Arun K. Gupta and Renu Arun. This, besides being very brief, is only of a short time frame and gives only an elementary introduction to early attempts at situating distance education among its transitional issues. K. Sujatha's paper on Research on Distance Education highlights some critical areas and criteria adopted in various studies towards evaluation of subjects such as its achievements, cost components, perception of participants etc. This is an account of a descriptive nature. The reference to guidelines of the UGC for correspondence courses, and other key elements such as instructional material, teaching methodology, personal contact programmes, response sheets of students of a few chosen universities, have been cited as research issues without much of an investigative in-depth analysis of respective fields of concern. P.K. Sahoo's paper on Trend and Perspectives refers to the development of the system in the context of the repeated issues which are of interest such as its effectiveness, instructional strategies, training needs of teachers, course development, finance etc. He has also listed area-wise classification of studies on distance education which is only of an academic interest and when viewed from our current perspective, is only of a historical context and relevance. The observation that students have a positive attitude towards the system calls for its greater qualitative enrichment and futuristic conceptual overhaul. The related information requires to be analysed and restructured through rigorous research insights to strengthen the system from different specific angles.

In Stock-taking, Concerns and Prospects in the context of distance educational research in India, Santosh K. Panda briefly offers comments on state of research and its survey. He refers to methodology of educational research and gives an impressive numerical account of Ph.D. studies and research projects in this area to indicate growing research interest in Distance Education. Despite its expansion distance education research has been viewed with scepticism. Though some studies have been descriptive in terms of various topics such as curriculum, instructional strategies, learning ex-

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Dean of Colleges-cum-Director, College Development Council, Himachal Pradesh University, Shimla-171 005.

perience, institutional autonomy in management, economics, staff development etc, yet many findings cannot be correlated to application. Management has been an important area of interest for National Institute on Distance Education for the co-ordination, planning and quality control of distance education. Its area specific results are yet to be tested for implementation. He has pleaded for experimental research in specific areas for developing models and alternatives to enhance application and impact of distance education in its instructional effectiveness and objectives vis-a-vis its learners.

Gomatam in the article on Distance Education Research in Centre for Evaluation : A Review, has made a case study of Dr. Ambedkar Open University with its centre for evaluation to carry out extensive and intensive research on various aspects of distance education. It takes into its consideration performance of the students, their profiles, role of counselling, coaching strategies, assignments, costs, limitations etc as its areas of concern and investigation. K. Murali Manohar, Sudhakar and Prasad have added an important chapter on Bibliometric Study on distance education research in India. They have classified sixteen areas for research activity. Besides this there is a comprehensive bibliography of research inputs. Ahluwalia has pleaded for corrective interventions through research for making the system more effective. The concluding chapter of the book carries valuable information on distance education faculty and its research imperatives. It has analysed opinions through tables and has rightly emphasised that the institutions should take research as a part of their general obligation. Faculty should exchange information on research activities and study results so as to reform the system.

Despite expanding interest and information explosion there is a disturbing asymmetry between distance education growth and its research. Though there is news of consolidation taking place, there is lack of interest in linkage between research inputs vis-a-vis its results and the improvements in the system. There is need to balance research in areas such as empowerment and autonomy of course providers, access, quality, cost effectiveness, student diversity and their support services, design, delivery, validation of courses and use of information technology for promoting distance education as a new culture of higher education with shared vision and values for extension of its horizons. A distinct commitment on research alone can articulate its concerns and sustain the system. The book is only an initial attempt to bring all concerned issues together for research so as to upgrade the system and improve its quality. Though the book does not offer any entrenched views and interests yet it shows its modest concern for greater sensitivity to the challenges ahead which can be addressed through research only. Needless to add that as more people than ever before access it with a market approach with many competing partners and alternatives, success of the system will be possible only through concomitant research in its grey areas and its constant renovation through a more learner friendly orientation.

In all, the four volumes are a modest and intimate tribute to Prof. G. Ram Reddy who promoted the system with dedication and visualised its world-wide future opportunities, role and perspective with foresight and commitment. ❑

UNIVERSITY OF ROORKEE
ENTRANCE EXAMINATION

REE 2000

FOR ADMISSION TO B.E./B.ARCH.

Admissions to first year of B.E./B.Arch. courses for the academic year 2000-2001, in nine branches of Engineering and in Architecture, will be made through a two stage entrance examination as per the following details :

Ist Stage

Qualifying examination on Dec. 29, 1999	One objective type question paper of **2 hours** duration in Mathematics, Physics & Chemistry

IInd Stage

Main examination on **May 11 & 12, 2000** for those who qualify in the first stage exam	Three papers each of **2 hours** duration in Mathematics, Physics & Chemistry besides Aptitude Test of **3 hours** for B.Arch. candidates

Candidates who have passed or are due to appear at the Intermediate Science (10+2) or equivalent examination with Mathematics, Physics, Chemistry or Geology are eligible to appear in REE-2000. Detailed information regarding forms, centres etc will be notified in leading National Dailies in August 1999. "Syllabus" for the qualifying examination will appear in Employment News dated July 24/25, 1999.

Caution : The University of Roorkee does not conduct any coaching classes or correspondence courses for its entrance examination and its has no connection with any such institute/organisation.

REGISTRAR

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities (March-April, 1999)

AGRICULTURE AND VETERINARY SCIENCES

Animal Biochemistry

1. Vinze, Mukesh. **Studies on follicular fluid proteins and their effect on invitro steroidgenesis in buffaloes.** Department of Animal Biochemistry, National Dairy Research Institute, Karnal.

Animal Nutrition

1. Chatterjee, Anupam. **Ruminal and post-ruminal digestibility of formaldehyde treated mustard cake protein and its effect on growth and milk production in Murrah buffaloes.** Department of Animal Nutrition, National Dairy Research Institute, Karnal.

2. Dutta, Tapas Kumar. **Studies on the potentials of probiotics on in vitro fermentation and productive performance in lactating dairy cows.** Department of Animal Nutrition, National Dairy Research Institute, Karnal.

3. Prasad, Kollu Satyanarayana. **Biodegradation of organo-chlorine pesticide residues in ruminants and measures to minimise their excretion in milk.** Department of Animal Nutrition, National Dairy Research Institute, Karnal.

4. Singh, Ram. **Studies on microstructure and chemical characteristics of processed and unprocessed animal feeds for quality assurance.** Department of Animal Nutrition, National Dairy Research Institute, Karnal.

Animal Physiology

1. Singh, Jitender Kumar. **Seasonal effects on physiological and endoctrine changes during estrous cycle in buffaloes.** Department of Animal Physiology, National Dairy Research Institute, Karnal.

Dairy Microbiology

1. Lata, Suman. **Biotechnological approach to counteract aflatoxins in dairy products and animal feeds.** Department of Dairy Microbiology, National Dairy Research Institute, Karnal.

2. Rao, Nageswara Korasapati. **Genetic and biochemical characterization of bacteriocin produced by a selected pediococcus sp.** Department of Dairy Microbiology, National Dairy Research Institute, Karnal.

Horticulture

1. Baburao, Sawant Ramrao. **Improvement of Karonda (Carissa Carandas L).** (Dr U T Desai), Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Ahmednagar.

2. Singh, Kamleshwar **Investigation on fruit development fruit quality, post harvest storage and processing of litchi (litchi chinensis sonn) culfivars.** Department of Horticulture, Birsa Agricultural University, Ranchi.

Plant Breeding

1. Kadam, D E. **Genetic architecture of forage yield, itscomponents, nutritional characters and stability analysis in unilocation and multilocation environments in sweet Sorghum (Sorghum Bicolor (l) Moench).** (Dr F B Patil), Department of Plant Breeding, Mahatma Phule Krishi Vidyapeeth, Ahmednagar.

BIOLOGICAL SCIENCES

Biology

1. Patro, Kari Benu Gopal. **Studies on reproductive biology on Indian tasar silk insect, antheraea pahia linn and antheraea mylitta drury (lepidoptera:saturnidae) with special emphasis on inovating commercial seed/egg production technology.** (Prof M C Dash), Department of Biology, Sambalpur University, Burla.

Botany

1. Gupta, Reena. **Protein stability: Development of methods of estimation of conformational stability of proteins.** (Prof Faizan Ahmad), Department of Botany, Jamia Millia Islamia, New Delhi.

2. Jinu Devi. **Morphophysiological and biochemical studies of some indigenous rice (Oryza Sativa L) varieties of Assam.** Department of Life Sciences, Dibrugarh University, Dibrugarh.

3. Karunakaran, P V. **Ecological studies on the grassland of Eravikulam National park, Kerala.** (Dr G S Rawat), Department of Botany, Saurashtra University, Rajkot.

4. Saha, Tapas. **Studies on DNA triplex/tetraplex formation in palindromic sequences under superhelical stress or binding of intercalating peptide.** (Prof Faizan Ahmad and Prof Kunal B Roy), Department of Botany, Jamia Millia Islamia, New Delhi.

5. Talwai, Sujata M. **Studies on biotic and abiotic factors in certain fresh water ecosystems of Dharwad.** (Dr G R Hegde), Department of Botany, Karnatak University, Dharwad.

Microbiology

1. Menon, Tara Suresh. **Studies on the rhizospheric factors affecting interactions of rhizobia and the host plant.** Department of Microbiology, Maharaja Sayajirao University of Baroda, Baroda.

2. Ravinder Kaur. **Effect of micro nutrients on symbiotic N2-fixation and yield of Persian clover (Trifolium resupinatum L).** Department of Microbiology, Punjab Agricultural University, Ludhiana.

3. Singh, Malkit. **Possible role of enteric bacterial antigens in the pathogenesis of reactive arthritis and Reiter's syndrome.** Department of Microbiology, Postgraduate Institute of Medical Education and Research, Chandigarh.

Zoology

1. Bharati, V Ratna. **Protozooplankton in relation to pollution in Visakhapatnam harbour, East Cost of India.** (Dr CKalavati), Department of Zoology, Andhra University, Waltair.

2. Dandekar, Devendra Suresh. **Photoendocrine manipulation, a novel paradigm for potentiating poultry productivity : Effect of time step-up photoperiod and mild hypo/ hyper - corticalism in the domestic fowl.** Department of Zoology, Maharaja Sayajirao University of Baroda, Baroda.

3. Devkar, Ranjitsinh Vijaysinh. **Photoendocrine manipulations and poultry productivity : effect of timed transition timed from long to short period in combination with hypo or hypercorticalism in RIR pullets** Department of Zoology, Maharaja Sayajirao University of Baroda, Baroda.

4. Jayaprada C. **Ecology of benthic microalgae in relation to pollution in Visakhapatnam harbour, East Coast ofIndia.** (Prof A V Raman), Department of Zoology, Andhra University, Waltair.

5. Khanapara, Rajlakshmi Devi. **Study of the hypolipidaemic effect of clerodendron colebroo kianum walp (NEFAFU).** (Prof D K Sharma), Department of Zoology, Gauhati University, Guwahati.

6. Shamitha, G. **Comparative studies on tasar silkworm (Anthereamylitta drury), Andhra local ecorace under outdoor and total indoor conditions.** Department of Zoology, Kakatiya University, Warangal.

7. Sharma, Mridula. **A study of Isozyme patterns and genetic polymorphism in some fishes.** Department of Zoology, Kurukshetra University, Kurukshetra.

8. Velamakanni Venkata. **Studies on persistence and degradation of some pesticides in soil in relation to arthropod fauna.** Department of Zoology, Kakatiya University, Warangal.

EARTH SYSTEM SCIENCES

Geology

1. Prasad, V S S **Grain size heavy mineral and seasonal profile studies of the beaches between baruva-bavanapadu, East Coast of India.** (Dr D Rajasekhar Reddy), Department of Geology, Andhra University, Waltair.

2. Rao, P L Venkata Prasada **Studies on mineralogical and geochemical transformations of coal ash in relation to coal combustion from Kothagudem coal field, Andhra Pradesh, India.** (Dr M Jagannadha Rao), Department of Geology, Andhra University, Waltair.

Geophysics

1. Rao, P Somasekhar. **Groundwater prospecting in semi-arid regions-geophysical and geohydrological studies in upper kanderu basin, Kurnool district, Andhra Pradesh.** (Prof B V S Murty), Department of Geophysics, Osmania University, Hyderabad.

ENGINEERING SCIENCES

Civil Engineering

1. Pradhan, Jagannath. **Metropolitan transportation modelling, with a case study of Madras metropolitan area, India.** (Dr M S Rao), Department of Civil Engineering, Sambalpur University, Burla.

2. Raju, M Jagapathi. **Integrated ground water studies and evaluation of alluvial aquifers in Penner river basin, Nellore district, Andhra Pradesh, India.** (Prof V B Sarma and Dr R Rama Rao), Department of Civil Engineering, Andhra University, Waltair.

Earthquake Engineering

1. Siavoshnia, Mehdi. **Behaviour of reinforced earthen embankments during earthquakes.** Department of Earthquake Engineering, University of Roorkee, Roorkee.

Mechanical Engineering

1. Raj Kumar. **Design of an evaporative tabular heat dissipator using optimum quantities of fluids.** (Dr V K Gupta), Department of Mechanical Engineering, Guru Jambheshwar University, Hisar.

Textile Engineering

1. Bhattacharya, Someshwar Santimoy. **Modification of rotor spinning machine for producing open end-span-care-span yarn and evaluation of the yarn characteristics.** Department of Textile Engineering, Maharaja Sayajirao University of Baroda, Baroda.

MATHEMATICAL SCIENCES

Mathematics

1. Abdalla Jamil Abdel-Fattah Abdalla Asad. **Some matrical fixed point theorams for certain classes of mappings.** (Prof Aqeel Ahmed), Department of Applied Mathematics, Aligarh Muslim University, Aligarh.

2. Dubey, Yadvendra Prasad. **Interpolation and approximation by spline functions.** Department of Mathematics, Rani Durgavati Vishwavidyalaya, Jabalpur.

3. Juri Devi. **Studies on groups and rings in fuzzy setting.** (Prof B Banerjee), Department of Mathematics, Dibrugarh University, Dibrugarh.

4. Murty, A Sreerama. **Some fixed point theorems in metric and quasi-gauge spaces.** Department of Mathematics, Andhra University, Waltair.

5. V Yogeswara. **A study of fuzzy partial algebras.** (Dr N V E S Murty), Department of Mathematics, Andhra University, Waltair.

6. Tiwari, Shraddha. **Some problems in commutativity of rings and its generalisations.** (DR R D Giri), Department of Mathematics, Nagpur University, Nagpur.

Statistics

1. Deb, Bidhan Chandra. **Consumer expenditure in India : An econometric study.** (Prof C K Chetia), Department of Statistics, Dibrugarh University, Dibrugarh.

2. Kalamkar, Vipul Arvind. **A study of some AR type models.** Department of Statistics, Maharaja Sayajirao University of Baroda, Baroda.

MEDICAL SCIENCES

Immunopathology

1. Mujtaba, Syed Shiraz. **Prevalence of epstein-barr vi-**

rus and cytomegalovirus in HIV infected and control subjects. Department of Immunopathology, Postgraduate Institute of Medical Education and Research, Chandigarh.

Pathology

1. H R Shashikala. **Effect of hyperbaric oxygen therapy on the language recovery in aphsics.** (Dr M Jayaram and Dr D Nagaraj), Department of Speech Pathology and Audiology, National Institute of Mental Health and Neuro Sciences, Bangalore.

2. Sanghani, Susmita. **Histological aspects of obstatric pathology Caynee pathology in relations to endomaterial changes in patients of infertility and dyfunctional asterine bleeding.** (Dr J R Joshi), Department of Pathology, Saurashtra University, Rajkot.

Pharmaceutical Sciences

1. Reddy, Gopu Bala. **Bioactive metabolites of marine organisms : Chemical and biological investigation on the metabolites of sinularia, lobophytum, sarcophytum (Alcyonarians) species and mycale mytilorum (Porifera) of the Indian Ocean.** (Prof D Venkata Rao), Department of Pharmaceutical Sciences, Andhra University, Waltair.

Pharmacy

1. Baweja, Jitendra Mohansingh **Modified Indian gums as hydrophilic matrices for oral controlled release drug delivery systems** Department of Pharmacy, Maharaja Sayajirao University of Baroda, Baroda.

PHYSICAL SCIENCES

Bio Chemistry

1. Chhaya, Jignasha. **Ecotoxicological studies of dyeing and printing industry effluent on some enzymes in few vital organs of a coustal mudskipper periophthlamas dipes].** (Dr S M Pandya), Department of Bio Chemistry, Saurashtra University, Rajkot.

2. Md. Shamsulola. **Studies on mammalian brain soluble lectins.** (Dr. Naheed Bano), Department of Bio-Chemistry, Aligarh Muslim University, Aligarh.

3. Srigiridhar, K. **Effects of excess iron in the gastro intestinal tract of rat.** (Dr K Mudhavan Nair), Department of Bio Chemistry, Osmania University, Hyderabad.

4. Vardhan, Shasi, K. **Inhibition of tyrosine aminotransferase by ODAP, the lathyrus sativus excitotoxin and the mechanism of its neurotoxicity.** (Pror S L N Rao), Department of Biochemistry, Osmania University, Hyderabad.

Chemistry

1. Naseer, Uzma. Studies on inorganic ion exchangers and ligand ion exchangers. (Prof J P Rawat), Department of Chemistry, Aligarh Muslim University, Aligarh.

2. Ahmed, Syed Mohamud. **Chemistry of natural products.** (Prof M Ilyas), Department of Chemistry, Aligarh Muslim University, Aligarh.

3. Bhattacharyya, Amitabha. **Studies on the phase transitions and molecular conformations in langmuir monolayers.** (Prof Kattera A Suresh), Department of Chemistry, Jawaharlal Nehru University, New Delhi.

4. Mehta, Prakash M **Studies on heterocyclic compounds of medicinal interest.** (Dr N A Chauhan), Department of Chemistry, Saurashtra University, Rajkot.

5. Patel, Dilipkumar Rameshbhai. **Some studies on polymarn enchered metal chelats as catalyst.** Department of Chemistry, Maharaja Sayajirao University of Baroda, Baroda.

6. Reddy, Y Ravindra. **Synthesis of enantiopure intermediates and development of new reduction procedure.** (Dr J S Yadav), Department of Chemistry, Osmania University, Hyderabad.

7. Roy, Sushmita M. **Synthesis of some novel coordination polymers of some transition metals and their structural studies.** (Prof K N Munshi and Dr H D Juneja), Department of Chemistry, Nagpur University, Nagpur.

8. Saran, Raghaw. **Analysis of trace elements in geological samples utilising appropriate analytical techniques.** (Prof N K Baishya), Department of Chemistry, Gauhati University, Guwahati.

9. Sarkar, P C. **Infra-red spectroscopic studies on lac resin and its constituents.** Department of Chemistry, Ranchi University, Ranchi.

10. Sukumaran, Sreejith. **On the elastic and dynamical properties of biaxial liquid crystals.** (Prof G S Ranganath), Department of Chemistry, Jawaharlal Nehru University, New Delhi.

11. Warrier, Sobha R. **Electrooptic and dielectric investigations on some liquid crystals.** (Prof N V Madhusudana), Department of Chemistry, Jawaharlal Nehru University, New Delhi.

Physics

1. Ahmed, Musheer. **Electronic spectroscopy of quinones some experimental and theoretical studies.** (Prof Zahid Husain Khan), Department of Physics, Jamia Millia Islamia, New Delhi.

2. Bayouni, Abdussalam Khalil El. **Third demension geological mapping of arid lands using remote sensing date integrated geophysics.** (Dr Iqbaluddin), Department of Physics, Aligarh Muslim University, Aligah.

3. Charalwar, Sanjay Ganpatrao. **Investigation on some aspects of hard sphere model of real fluids.** (Dr Vilas A Tabhane), Department of Physics, Nagpur University, Nagpur.

4. Chhaya, Urvi V. **Microscopic and microscopic magnetic properties of spinel oxides.** (Dr R G Kulkarni), Department of Physics, Saurashtra University, Rajkot.

5. Hiremath, P R. **Linear and order related physical properties of some organic compounds.** (Dr R L Patil), Department of Physics, Karnatak University, Dharwad.

6. Sharma, Arvind Kumar. **Transfer of radiation through the atmosphere containing cyclopropenylidene.** (Prof Z H Khan), Department of Physics, Jamia Millia Islamia, New Delhi.

NATIONAL INSTITUTE OF RURAL DEVELOPMENT
(An Organisation of the Ministry of Rural
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'Rajendranagar, Hyderabad - 500 030.

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For developing training material, designing and conducting training and research programmes.

Eligibility
Persons belonging to IAS/Central Services/ State Services or those working in Training & Research Institutions/Public Sector Undertakings/ Banks/ Universities/ NGOs with atleast ten years experience in rural development area, preferably in Tribal Development; Forestry & Environment programmes; Management of Science and Technology in Rural Development; Distance Education including application of IT in rural areas; Micro Planning with Application of Remote Sensing and GIS; Rural Infrastructure, Rural Marketing; Land Reforms; Education, especially Education for rural masses, Food Security, Watershed Management; can apply.

Duration
Minimum six months - Maximum three years.

Salary
Service persons will be eligible for Training Allowance of 30% in addition to grade pay and other allowances. Other benefits includes medical facilities, LTC, secretarial and office assistance, accomodation in the campus. Suitable remuneration will be paid to persons from NGOs.

Interested persons may write for application forms and other details to the Registrar, NIRD, Rajendrangar, Hyderabad 500 030, enclosing a DD for Rs.100/- in favour of Registrar, NIRD.

Application complete in all aspects should reach the Registrar on or before **17th September, 1999**.

REGISTRAR

NATIONAL INSTITUTE OF RURAL DEVELOPMENT
(An Organisation of the Ministry of Rural
Development, Govt. of India, New Delhi)
Rajendranagar, Hyderabad - 500 030.

REQUIRES SENIOR FELLOWS

To undertake research on important topics of current interest relating to rural development on a full-time basis and also act as Resource Persons in training programmes of NIRD.

Eligibility
Eminent persons from Universities/NGOs, senior bankers, senior academics and scholors with a flair for rural development; senior officers both serving and retired from the Government of India/States, Public Sector Undertakings.

Age limit
Sixty five years at the time of completion of Fellowship.

Duration
Three months to three years.

Remuneration and other incentives :

- Lumpsum amount upto Rs.50,000/- for three months Fellowship.
- Fellowship amount upto Rs.5 lacs for duration of more than three months and upto a maximum of 3 years.
- Additional monthly subsistence allowance on case to case basis.
- Serving officers eligible for cadre pay and 15% fellowship grant instead of monthly subsistence allowance.

Interested persons may write to Registrar, for application form and details enclosing DD for Rs.100/- in favour of Registrar, NIRD, on or before **10th September, 1999**.

REGISTRAR

Grams : Manovikas **Telephone : 7751741-45**
Email : nimh@hyd.ap.nic.in **Fax : (040) 7750198**

NATIONAL INSTITUTE FOR THE MENTALLY HANDICAPPED

(Ministry of Social Justice & Empowerment, Govt. of India)
Manovikas Nagar P.O., Secunderabad-500 009

EMPLOYMENT NOTICE 1/99-00

Applications in the prescribed form are invited from the Indian citizens for the undermentioned posts at National Institute for the Mentally Handicapped, Manovikas Nagar, Secunderabad.

S. No.	Name of the post	Reservation	Number of posts	Scale of Pay	Maximum age limit	Qualifications
1.	Lecturer in Occupational Therapy	UR	ONE	Rs. 8000-275-13500	45 yrs. As on 1.7.99	**Essential :** i) Three years degree/ diploma in Occupational Therapy from a recognised Institute/ University ii) Five years experience in Occupational Therapy out of which three years should be in teaching. **Desirable :** Candidates having experience of working in the field of vocational training and job placement will be given preference.
2.	Lecturer in Clinical Psychology	OBC	ONE	Rs. 8000-275-13500	45 yrs. As on 1.7.99	**Essential :** i) M.A. in Psychology with two years postgraduate Diploma (DM & SP) or M.Phil. in Clinical psychology of a recognised University. ii) Two years experience of working in the Child Guidance Clinic or School for the mentally retarded after Postgraduate qualification. **Desirable :** i) Candidates having experience of working in the field of vocational training and job placement will be given preference. ii) Ph.D. in Clinical Psychology.

Prescribed application form can be had on payment of Rs. 8/- in the form of Demand Draft drawn in favour of Director, National Institute for the Mentally Handicapped, Secunderabad along with a self addressed stamped envelope of size 28x12$^1/_2$ cms. Sent to Deputy Director (Admn.), National Institute for the Mentally Handicapped, Manovikas Nagar, Secunderabad-500 009. **Last date for submission of filled in application is 13th September, 1999.**

L. Govinda Rao
Dated the 20th July, 99 **DEPUTY DIRECTOR (ADMN.)**

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD

KRISHI ANUSANDHAN BHAVAN, PUSA , NEW DELHI-110 012

Advt. No. 5/99

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HEAD OF DIVISIONS

Pay Scale · Rs. 16400-22400

Indian Grassland & Fodder Research Institute, Jhansi

137. Head, Division of Seed Technology (One Post)
Qualifications Essential i) Doctoral degree in Seed Technology/Plant Breeding/Genetics/Agrl. Botany. ii) Principal Scientist in the scale of Rs. 16400-22400 or in an equivalent position OR 8 years experience as a Senior Scientist (Rs. 12000-18300) or in an equivalent position. OR An eminent Scientist having proven record of scientific contribution working in a reputed organisation/ institute having at least 13 years experience in the relevant subject. iii) Evidence of contribution to research/ teaching/ extension education as supported by published work/ innovations iv) Specialisation and experience in Seed Production/Seed Technology

138. Head, Division of Grassland & Silvipasture Management (One Post)
Qualifications Essential i) Doctoral degree in Botany/Economic Botany/Agricultural Botany/Breeding Genetics and Plant Breeding/Agroforestry. ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Research/Teaching/Extension experience in the field of Grassland Management/Silvipasture Management

Central Institute for Cotton Research, Nagpur

139. Head, Regional Station, Sirsa (One Post)
Qualifications Essential · i) Doctoral degree in any discipline relevant to Crop Science ii) & iii) As in Item No 137(ii) & 137(iii) above. iv) Specialisation in Agril Crops with particular reference to Cotton

National Dairy Research Institute, Karnal

140. Head, Southern Regional Station, of NDRI at Bangalore (One Post)
Qualifications Essential i) Doctoral degree in the field of Dairy Science/Veterinary Science and Animal Science ii) & iii) As in Item No. 137(ii) & 137(iii) above iv) Specialisation and experience in Dairy Production/Dairy Technology

141. Head, Division of Dairy Technology (One Post)
Qualifications Essential i) Doctoral degree in the field of Dairy Technology/Food Technology/Dairy Science ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience in the Dairy Technology Discipline.

142. Head, Division of Dairy Economics Statistics & Management (One Post)
Qualifications Essential · i) Doctoral degree in the field of Agril Economics/Statistics/Dairy Economics/Statistics. ii) & iii) As in Item No. 137(ii) & 137(iii) above iv) Specialisation and experience Coordination and management of research/teaching in the field of Agril Economics/Statistics/ Dairy Econmics/Statistics.

Vivekananda Parvatiya Krishi Anusandhan Shala, Almora

143. Head, Division of Crop Improvement (One Post)
Qualifications Essential i) Doctoral degree in Plant Breeding/Genetics/ Agricultural Botany/Botany ii) & iii) As in Item No. 137(ii) & 137(iii) above iv) Specialisation and experience in the field of cereal breeding and seed production in hill crops

144. Head, Division of Crop Production (One Post)
Qualifications Essential i) Doctoral degree in Agricultural Chemistry/Soil Science/ Agronomy/ Physiology. ii) & iii) As in Item No 137(ii) & 137(iii) above. iv) Experience in Crop Production in a Cropping System perspective.

Central Tobacco Research Institute, Rajahmundry

145. Head, Division of Crop Improvement (One Post)
Qualifications Essential . i) Doctoral degree in Plant Breeding/ Genetics/ Biotechnology ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience in Commercial/Tobacco crops

146. Head, Division of Crop Protection (One Post)
Qualifications Essential · i) Doctoral degree in Agricultural Entomology ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience in field crops

147. Head, Division of Crop Production (One Post)
Qualifications Essential : i) Doctoral degree in Agronomy ii) & iii) As in Item No. 137(ii) & 137(iii) above iv) Specialisation and experience in system oriented agronomic research/Tobacco crop.

148. Head, Division of Crop Chemistry & Soil Science (One Post)
Qualifications Essential : i) Doctoral degree in Agricultural Chemistry ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience in working with crops.

National Bureau of Soil Survey & Land Use Planning, Nagpur

149. Head, Regional Centre, Nagpur under NBSS&LUP, Nagpur (One Post)
Qualifications Essential : i) Doctoral degree in Soil Science/Agronomy ii) & iii) As in Item No. 137(ii) & 137(iii) above iv) Relative specialisation and experience cognate to the job requirement (Soil Survey, Genesis, Classification, Soil Land scape relationship, Land use planning).

Central Potato Research Institute, Shimla

150. Head, Division of Crop Physiology & Biochemistry (One Post)
Qualifications Essential : i) Doctoral degree in Crop Physiology or Biochemistry/ Botany/ Horiculture (Vegetable) with specialisation in Plant Physiology. ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation in crop physiology or biochemistry preferably of potato/tuber crop or vegetable crop.

Indian Institute of Pulses Research, Kanpur

151. Head, Division of Crop Improvement (One Post)
Qualifications Essential . i) Doctoral degree in the field of Plant Breeding/Genetics ii) & iii) As in Item No. 137(ii) & 137(iii) above. iv) Specialisation and experience The candidate should have experience of working on pulse crops in the field of Genetics and Plant Breeding and should have done fruitful research work to his credit in the form of publications and release of varieties. He should have also aptitude and experience of multidisciplinary research in crop improvement.

152. Head, Division of Crop Production (One Post)
Qualifications Essential i) Doctoral degree in the field of Agronomy/ Soil Chemistry/ Agril Chemistry ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience The candidates should have experience of working on pulse crops in the field of Agronomy/ Soil Chemistry/ Agril Chemistry and should have done fruitful research work to his credit as evidenced by publications etc He should have also aptitude and experience of multidisciplinary research in crop production

153. Head, Division of Crop Protecion (One Post)
Qualifications Essential i) Doctoral degree in the field of Plant Pathology/Entomology ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience The candidates should have experience of working on pulse crops in the field of Plant Pathology/ Entomology/ Nematology and should have done fruitful research work to his credit as evidenced by publications etc He should have also aptitude and experience of multidisciplinary research in crop protection

154. Head, Division of Crop Physiology, Biochemistry & Microbiology (One Post)
Qualifications Essential i) Doctoral degree in the field of Plant Physiology ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience The candidates should have experience of working on food crops in the field of Plant Physiology/ Plant Biotechnology/ Biochemistry/ Microbiology and should have done fruitful research work to his credit as evidenced by publications etc He should have also aptitude and experience of multidisciplinary research in crop PBBM

Indian Agricultural Research,Institute, New Delhi

155. Head, Division of Entomology (One Post)
Qualifications Essential i) Doctoral degree in Entomology/ Zoology/ Agriculture based on Entomological investigation of Agril importance ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation in Entomology

156. Head, Regioinal Station, Pusa, Bihar (One Post)
Qualifications Essential . i) Doctoral degree in Plant Breeding or Genetics or Agricultural Botany with specialisation in plant breeding ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience in genetics improvement of crops preferably wheat, as evidence by development and release of new varities

157. Head, Regioinal Station, Amartara Cottage, Shimla (One Post)
Qualifications Essential i) Doctoral degree in Horticulture ii) & iii) As in Item No 137(ii) & 137(iii) above iv) Specialisation and experience on production/ breeding/ germplasm conservation of fruit crops of temprate regions

Indian Institute of Horticulture Research, Bangalore

158. Head, Central Horticultural Experiment Station (CHES), Gonikoppal under IIHR, Bangalore (One Post)
Qualifications Essential i) Doctoral degree in Horticulture or any other branch of Agriculture Sciences ii) & iii) As in Item No. 137(ii) & 137(iii) above iv) Specialisation and experience on Horticulural crops as evidenced by published work

159 Head, Division of Fruit Crops (One Post)
Qualifications Essential i) Good Academic record with doctoral degree in Horticulture ii) & iii) As in Item No 137(ii) & 137(iii) above. iv) Experience in Tropical/Sub-Tropical Fruit crops as evidenced by published work

PRINCIPAL SCIENTIST

Pay Scale Rs 16400-22400 *Age* Below 50 years (There will be no maximum age limit for the ICAR employees Relaxation to SC/ST candidates may be given in accordance with the orders issued by Govt of India from time to time).

National Research Centre for Oil Palm, Eluru

160. Principal Scientist (Horticulture) (One Post)
Qualifications Essential · i) Doctoral degree in Horticulture ii) 10 (Ten) years experience excluding the period spent in obtaining the Ph.D degree (subject to maximum of 3 years) in research/extention education provided 3 years experience is as a Senior Scientist (Rs 12000-18300) or in an equivalent position (iii) As in Item No 137(iii) above (iv) Specialisation in perennial Horticultural Crops and working experience with Palm crops.

National Bureau of Animal Genetic Resources, Karnal

161. Principal Scientist (Animal Genetics & Breeding) (One Post)
Qualifications Essential · i) Doctoral degree in Animal Genetics/Molecular Genetics. ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation and

experience of research in Molecular Biology DNA finger printing/genome analyses or any other branch of molecular genetics

Central Soil Salinity Research Institute, Karnal

162. Principal Scientist (Agronomy) (One Post)
Qualifications Essential : i) Doctoral degree in Agronomy ii) & iii) As in Item No. 160 (ii) & 137 (iii) above. iv) Specialisation · Water Management for salinity control/reclamation of salt affected soils

163. Principal Scientist (Agril. Economics) (One Post)
Qualifications Essential : i) Doctoral degree in Agricultural Economics ii) & iii) As in Item No. 160 (ii) & 137 (iii) above. iv) Specialisation · Resource economics of land and water management with special reference to reclamation of saline and water logged soil/drainage projects.

National Research Centre for Weed Science, Jabalpur

164. Principal Scientist (Plant Biochemistry) (One Post)
Qualifications Essential : i) Doctoral degree in Plant Biochemistry. ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation and relevant experience in Weed Science

165. Principal Scientist (Agronomy) (Two Post)
Qualifications Essential . i) Doctoral degree in Agronomy ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation and relevant experience in Weed Science.

166. Principal Scientist (Plant Physiology) (One Post)
Qualifications Essential . i) Doctoral degree in Plant Physiology ii) & iii) As in Item No. 160(ii) & 137(iii) above iv) Specialisation and relevant experience in Weed Science.

National Research Centre for Soyabean, Indore

167. Principal Scientist (Plant Breeding) (Two Posts)
Qualifications Essential i) Doctoral degree in Plant Breeding ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation and experience in breeding legume crops

168. Principal Scientist (Agronomy) (One Post)
Qualifications Essential . i) Doctoral degree in Agronomy ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation and experience in Crop Management aspects

Vivekananda Parvatiya Krishi Anusandhan Shala, Almora

169. Principal Scientist (Plant Breeding) (One Post)
Qualifications Essential i) Doctoral degree in Plant Breeding/ Genetics/ Agril. Botany. ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation and experience of research in breeding of major crops grown in hills

170. Principal Scientist (Agril. Chemistry) (One Post)
Qualifications Essential i) Doctoral degree in Agril Chemistry/Chemistry. ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation in Agril. Chemistry with special reference to nutrient and water management and organic recycling

171. Principal Scientist (Plant Pathology) (One Post)
Qualifications Essential i) Doctoral degree in Plant Pathology ii) & iii) As in Item No. 160(ii) & 137(iii) above iv) Specialisation in Plant Pathology and experience on major diseases of field crop(s) grown in hills

Project Directorate on Biological Control, Bangalore

172. Principal Scientist (Agricultural Entomology) (One Post)
Qualifications Essential i) Doctoral degree in Agriculture/Zoology with specialisation in Entomology ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation in biosystematics

National Bureau of Fish Genetics Resources, Lucknow

173. Principal Scientist (Biotechnology) (Animal Sciences) (One Post)
Qualifications Essential i) Doctoral degree in Molecular Biology/Genetics/ Biotechnology ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation in population genetic characterisation using DNA markers

174. Principal Scientist (Fish & Fishery Science) (One Post)
Qualifications Essential . i) Doctoral degree in Zoology/Fish & Fishery Science/Life Science/Marine Science ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation in Fish conservation biology/database management in situ conservation.

175. Principal Scientist (Veterinary/Fish Pathology) (One Post)
Qualifications Essential i) Doctoral degree in Pathology/Microbiology/ Virology/Zoology. ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation . quarantine/fish diseases/fish health management

Central Avian Research Institute, Izatnagar

176. Principal Scientist (Animal Nutrition) (One Post)
Qualifications Essential i) Doctoral degree in Animal Nutrition/Poultry Science with specialisation in Poultry Nutrition and Feed Technology. ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation and experience in the field of Poultry Nutrition and Feed Technology

177. Principal Scientist (Animal Physioilogy) (One Post)
Qualifications Essential . i) Doctoral degree in Vety. Physiology/Animal Physiology/Poultry Science with specialisation in Avian Physiology. ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation and experience in the field of Avian Physiology.

178. Principal Scientist (Livestock Products Technology) (One Post)
Qualifications Essential : i) Doctoral degree in Livestock Products Technology/Animal Products Technology/Poultry Science with specialisation in Meat and Poultry products technology. ii) & iii) As in Item No. 160(ii) & 137(iii) above. iv) Specialisation and experience in the field of Meat and Poultry Products Technology.

Central Research Institute for Dryland Agriculture, Hyderabad

179. Principal Scientist (Soil & Water Conservation Engineering) (One Post)
Qualifications Essential : i) Doctoral degree in Soil & Water Conservation Engineering ii) & iii) As in Item No. 160(ii) & 137(iii) above iv) Specialisation in the field of Soil and Water Conservation Engineering.

National Research Centre for Medicinal and Aromatic Plants, Anand

180 Principal Scientist (Horticulture) (One Post)
Qualifications Essential i) Doctoral degree in Horticulture/Plant Breeding/Agronomy ii) & iii) As in Item No 160(ii) & 137(iii) above. iv) Specialisation in Horticulture crops preferably Medicinal and Aromatic plants.

National Research Centre on Camel, Bikaner

181 Principal Scientist (Animal Biotechnology) (One Post)
Qualifications Essential i) Doctoral degree in Animal Biotechnology/ Biotechnology with specialisation in areas of Animal Production ii) & iii) As in Item No 160(ii) & 137(iii) above iv) Specialisation in Molecular Biology/Genetic Engineering/Animal Biotechnology related to Animal Reproduction & production

SENIOR SCIENTIST

Pay Scale Rs 12000-18300. *Age .* Below 45 years (There will be no maximum age limit for the ICAR employees Relaxation to SC/ST candidates may be given in accordance with the orders issued by Govt of India from time to time).

National Centre for Mushroom Research and Training, Chambaghat, Solan

182 Senior Scientist (Biotechnology) (One Post)
Qualifications Essential i) Doctoral degree in Biotechnology or Botany or Microbiology. ii) 5 (Five) years experience excluding the period spent in obtaining the Ph.D degree during service (subject to maximum of 3 years) in research/extention education as a Scientist (Rs 2200-4000) (pre-revised) or in an equivalent position in the relevant subject (iii) As in Item No 137(iii) above. (iv) Specialisation in biotechnology aspects preferably in mushroom or other fungi

Central Sheep & Wool Research Institute, Avikanagar

183. Senior Scientist (Animal Physiology) (One Post)
Qualifications Essential i) Doctoral degree in Veterinary or Animal Sciences with specialisation in Animal Physiology. ii) & iii) As in Item No 182(ii) & 137(iii) above iv) Specialisation in Animal Physiology of Ruminants.

184. Senior Scientist (Animal Genetics & Breeding) (Three Posts)
Qualifications Essential i) Doctoral degree in Animal Genetics/Animal Breeding ii) & iii) As in Item No 182(ii) & 137(iii) above. iv) Specialisation in breeding of domestic animals.

185. Senior Scientist (Biochemistry) (Animal Science) (One Post)
Qualifications Essential i) Doctoral degree in Animal Biochemistry/ Biochemistry with specialisation in Animal Sciences ii) & iii) As in Item No. 182(ii) & 137(iii) above iv) Specialisation in the area of Animal Biochemistry or Biochemistry of Animal System

186. Senior Scientist (Animal Biotechnology) (One Post)
Qualifications Essential i) Doctoral degree in Animal Biotechnology/ Biotechnology/ Molecular Biology/ Physiology with specialisation in cell functions of animals ii) & iii) As in Item No 182(ii) & 137(iii) above. iv) Specialisation in Molecular Biology/ Reproductive technologies.

187. Senior Scientist (Livestock Production & Management) (One Post)
Qualifications Essential . i) Doctoral degree in Animal Sciences with specialisation in Livestock Production and management ii) & iii) As in Item No 182(ii) & 137(iii) above iv) Specialisation in small ruminant production system.

188. Senior Scientist (Animal Reproduction) (One Post)
Qualifications Essential : i) Doctoral degree in Animal Sciences or Veterinary Science in the area of Animal Reproduction/ Veterinary Obsterics and Gynaecology/ Animal Physiology with specialisation in Animal Reproduction ii) & iii) As in Item No 182(ii) & 137(iii) above. iv) Specialisation in Reproduction Health/Semen Biology.

189. Senior Scientist (Veterinary Pathology) (One Post)
Qualifications Essential i) Doctoral degree in Veterinary Science with specialisation in Pathology, Bacteriology, Virology and Parasitology. ii) & iii) As in Item No 182(ii) & 137(iii) above. iv) Specialisation in Livestock disease diagnostics and prophylactics

190. Senior Scientist (Veterinary Parasitology) (One Post)
Qualifications Essential . i) Doctoral degree in Veterinary Sciences with specialisation in Parasitology/Pathology or Bacteriology. ii) & iii) As in Item No 182(ii) & 137(iii) above. iv) Specialisation in small or large ruminant animal health or production disease.

191. Senior Scientist (Agronomy) (Two Posts)
Qualifications Essential : i) Doctoral degree in Agricultural Science with specialisation in Agronomy/ Forage agronomy/ Agroforestry/ Agrostology. ii) & iii) As in Item No 182(ii) & 137(iii) above iv) Specialisation in Grassland or Agriculture Farm Management or Fodder Production.

192. Senior Scientist (Animal Nutrition) (Three Posts)
Qualifications Essential : i) Doctoral degree in Animal Sciences/ Veterinary Science with specialisation in Animal Nutrition. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in ruminant nutrition

193. Senior Scientist (Livestock Products Technology) (One Post)
Qualifications Essential : i) Doctoral degree in Animal/Veterinary Science in the area of Livestock Products Technology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in the area of Meat/ Wool/ Fibre/ Ruminant products technology.

194. Senior Scientist (Textile Chemistry) (One Post)
Qualifications Essential : i) Doctoral degree in Textile Chemistry/Chemical Engineering with specialisation in textiles. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in dying of wool/ wool textiles/ animal fibre.

195. Senior Scientist (Textile Manufacture) (Two Posts)
Qualifications Essential : i) Doctoral degree in Textile Engineering with 5 years experience (excluding the period spent in obtaining the Ph.D. degree during service, subject to a maximum of 3 (three) years) in research/ teaching/ extension education as a Scientist (Rs. 2200-4000) (pre-revised) or in an equivalent position in the relevant subject. OR Master degree in textile engineering with 8 years experience in textile manufacture as Scientist (Rs. 2200-4000) (pre-revised) or in an equivalent position in the relevant subject.

(ii) As in Item No. 137(iii) above. (iii) Specialisation in dying of wool textile, and animal fibre or manufacture of wool apparel.

Central Inland Capture Fisheries Research Institute, Barrackpore

196. Senior Scientist (Fish & Fishery Science) (Six Posts)

Qualifications Essential : i) Doctoral degree in Fish & Fishery Science. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and practical experience in teaching/ research in Fish & Fisheries Science.

197. Senior Scientist (Soil Science) (One Post)

Qualifications Essential : i) Doctoral degree in any discipline of Soil Science or Agricultural Chemistry. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and experience in Soil Chemistry/ Soil Fertility.

Directorate of Water Management, Patna

198. Senior Scientist (Agricultural Meterology) (One Post)

Qualifications Essential : i) Doctoral degree in Agricultural Meterology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in planning of field experiments and analysis of data of water management in relation to Agrometeorological parameters.

199. Senior Scientist (Soil & Water Conservation Engineering-Irrigation Engineering) (One Post)

Qualifications Essential : i) Doctoral degree in Agricutural Engineering with specialisation in Soil Water & Engineering with 5 years experience (excluding the period spent in obtaining the Ph.D. degree during service, subject to maximum of 3 (three) years) in research/ teaching/ extention education as a Scientist (Rs. 2200-4000) (pre-revised) or in an equivalent position in the relevant subject. OR Masters degree in the case of engineering discipline with 8 years experience in Research/ teaching/ extension education as Scientist (Rs. 2200-4000) (pre-revised) or in an equivalent position in the relevant subject. OR Masters degree in the case of engineering discipline with 8 years experience in Research/ teaching/ extension education as Scientist (Rs. 2200-4000) (pre-revised) or in an equivalent position in the relevant engineering subject. (ii) As in itme No. 137(iii) above. (iii) Specialisation in Irrigation Management in crops.

Project Directorate on Cattle, Modipuram, Meerut

200. Senior Scientist (Animal Genetics & Breeding) (One Post)

Qualifications Essential : i) Doctoral degree in Animal Genetics & Breeding. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in cattle breeding and utilisation of modern breeding concepts in cattle improvement programmes.

Central Arid Zone Research Institute, Jodhpur

201. Senior Scientist (Animal Nutrition) (One Post)

Qualifications Essential : i) Doctoral degree in Animal Nutrition. ii) & iii) As in item No. 182(ii) & 137(iii) above. iv) Experience in nutrition research of animals in Arid Zone.

Central Soil Salinity Research Institute, Karnal

202. Senior Scientist (Agronomy) (One Post)

Qualifications Essential : i) Doctoral degree in Agronomy. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : Water Management under Saline/Alkali soil problems.

203. Senior Scientist (Plant Breeding) (One Post)

Qualifications Essential : i) Doctoral degree in Plant Breeding. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation · Experience in the stress breeding with specific reference to salt tolerance

National Research Centre for Agro-Forestry, Jhansi

204. Senior Scientist (Agronomy) (One Post)

Qualifications Essential : i) Doctoral degree in Agronomy. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and relevant Experience on Agroforestry.

National Academy of Agricultural Research & Management, Hyderabad

205. Senior Scientist (Agricultural Economics) (One Post)

Qualifications Essential : i) Doctoral degree in Agricultural Economics. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : Advance training in the relevant field.

206. Senior Scientist (Educational Technology) (Two Posts)

Qualifications Essential : i) Doctoral degree in Education/ Educational Technology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : In Education/Educational Technology.

207. Senior Scientist (Agricultural Extension) (Two Posts)

Qualifications Essential : i) Doctoral degree in Agricultural Extension (or) Doctoral degree in any branch of Agricultural or Allied Sciences with specialisation in the relevant field. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : In the field of Agricultural Extension.

208. Senior Scientist (Mass Communication) (One Post)

Qualifications Essential : i) Doctoral degree in Mass Communication (or) Doctoral degree in any branch of Information Technology or Distance Education. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : In Mass Communication.

209. Senior Scientist (Educational Psychology) (One Post)

Qualifications Essential : i) Doctoral degree in Education/ Educational Psychology (or) Doctoral degree in Agricultural Extension or Sociology with specialisation in Psychology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : Education/ Educational Psychology.

210. Senior Scientist (Human Resources Management) (Two Posts)

Qualifications Essential : i) Doctoral degree in Human Resources Management (or Doctoral degree in any branch of Agricultural or allied Sciences with specialisation in the relevant field. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : In the field of Human Resources Management.

211. Senior Scientist (Agricultural Research Management) (One Post)

Qualifications Essential : i) Doctoral degree in any Agricultural Sciences. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : In Agricultural research management as evidenced by PG Diploma; publication in relevant area and training in use of management tools.

Central Institute of Brackishwater Aquaculture, Chennai

212. Senior Scientist (Biotechnology) (Animal Science) (One Post)

Qualifications Essential : i) Doctoral degree in Fishery Science/ Mariculture/ Marine Biology/ Molecular Biology/ Biotechnology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and Experience of research in Biotechnology (Animal Science).

213. Senior Scientist (Animal/Fish Physiology) (One Post)

Qualifications Essential : i) Doctoral degree in Fishery Science/ Mariculture/ Marine Biology/ Zoology ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and Experience of research in Fish/Animal Physiology.

214. Senior Scientist (Agricultural Extension) (One Post)

Qualifications Essential : i) Doctoral degree in Fishery Science/ Mariculture/ Marine Biology/ Agricultural Extension. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and Experience of research in Fisheries/ Agricultural Extension and Education

Central Institute of Agricultural Engineering, Bhopal

215. Senior Scientist (Mechanical Engineering) (One Post)

Qualifications Essential i) Doctoral degree in Mechanical/ Agricultural Engineering with 5 years experience (excluding the period spent in obtaining the Ph D. degree during service, subject to maximum of 3 (three) years) in research/ teaching/ extention education as a Scientist (Rs 2200-4000) (pre-revised) or in an equivalent position in the relevant subject OR Masters degree in Mechanical/ Agricultural engineering with 8 years experience in research/ teaching/ extension education as Scientist (Rs 2200-4000) (pre-revised) or in an equivalent position in the relevant subject. (ii) As in Item No. 137(iii) above (iii) Experience of manufacturing agricultural implements and machinery.

Vivekananda Parvatiya Krishi Anusandhan Shala, Almora

216. Senior Scientist (Agricultural Economics) (One Post)

Qualifications Essential : i) Doctoral degree in Agricultural Economics. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in production economics of important crops grown in hills.

217. Senior Scientist (Agronomy) (One Post)

Qualifications Essential . i) Doctoral degree in Agronomy. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and research Experience on weed management.

218. Senior Scientist (Agronomy) (Two Posts)

Qualifications Essential · i) Doctoral degree in Agronomy. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and research Experience of natural resources management in important hill crops

National Research Centre on Coldwater Fisheries, Nainital

219. Senior Scientist (Animal Genetics & Breeding) (One Post)

Qualifications Essential : i) Doctoral degree in Zoology/ Fishery Science/ Aquaculture/ Genetics. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Fish Genetics/ Induced Fish Breeding/ Aquaculture and preferably having worked with Coldwater Fish species.

220. Senior Scientist (Fish & Fishery Science) (Two Posts)

Qualifications Essential : i) Doctoral degree in Zoology/ Fishery Science/ Limnology/ Environment Science. ii) & iii) As in Item No 182(ii) & 137(iii) above. iv) Specialisation in fisheries limnology and relevant experience of having worked in Coldwater Aquatic ecosystems

221. Senior Scientist (Animal Nutrition) (One Post)

Qualifications Essential . i) Doctoral degree in Zoology/ Fishery Science/ Aquaculture/ Fish Nutrition/ Physiology/ Biotechnology ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Fish Nutrition/ Aquaculture/ Fish Physiology/ Biotechnology and preferably having worked with Coldwater Fish Species.

Central Agricultural Research Institute, Port Blair

222. Senior Scientist (Agricultural Economics) (One Post)

Qualifications Essential : i) Doctoral degree in Agricultural Economics. ii) & iii) As in Item No. 182(ii) & 137(iii) above iv) Specialisation in Agricultural Economics.

223. Senior Scientist (Forestry) (One Post)

Qualifications Essential · i) Doctoral degree in Forestry/ Agro-forestry/ Botany/ Agricultural Botany ii) & iii) As in Item No 182(ii) & 137(iii) above iv) Specialisation in the field of Forestry.

224. Senior Scientist (Soil Chemistry & Fertility) (One Post)

Qualifications Essential : i) Doctoral degree in Soil Chemistry and Fertility ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in the field of the subject.

225. Senior Scientist (Plant Pathology) (One Post)

Qualifications Essential : i) Doctoral degree in Plant Pathology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in the field of pathology in respect of plants

226. Senior Scientist (Fisheries) (One Post)

Qualifications Essential : i) Doctoral degree in Zoology/ Fishery Science. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Fish production and management, particularly in marine and brackish water aquaculture in island/coastal ecosystem/mangrove ecosystem.

Central Institute of Freshwater Aquaculture, Bhubaneswar

227. Senior Scientist (Fish & Fishery Science) at KVK/TTC under CIFA (Three Posts)

Qualifications Essential : i) Doctoral degree in the relevant field of Fisheries Science/ Zoology with specialisation in Fish & Fishery Science or Aquatic Ecology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in conducting training and TOT programmes in the field of Freshwater Aquaculture.

228. Senior Scientist (Agricultural Chemistry) at KVK/TTC under CIFA (One Post)

Qualifications Essential : i) Doctoral degree in Agricultural Chemistry/ Soil Science/ Soil Chemistry. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in conducting training and TOT programmes in the field of Soil & Water Chemistry.

National Bureau of Animal Genetic Resources, Karnal
229. Senior Scientist (Biochemistry) (One Post)
Qualifications Essential : i) Doctoral degree in Biochemistry. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Animal Biochemistry with experience and knowledge of embryo transfer technology and harmonal assays.
230. Senior Scientist (Animal Biotechnology) (Two Posts)
Qualifications Essential : i) Doctoral degree in Molecular Biology/ Biotechnology/ Genetics. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation : Experience and knowledge in Gene analysis DNA sequencing and/or construction of DNA library relevant to farm animals.
231. Senior Scientist (Animal Genetics and Breeding) (Four Posts)
Qualifications Essential : i) Doctoral degree in Animal Genetics and Breeding. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation · in Population Genetics with reference to management of Animal Genetics Resources.

National Research Centre for Oil Palm, Pedavegi, Eluru, A.P.
232. Senior Scientist (Plant Breeding) (One Post)
Qualifications Essential : i) Doctoral degree in Plant Breeding/ Horticulture. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation on crops improvement work of perennial crops.

National Bureau of Fish Genetic Resources, Lucknow
233. Senior Scientist (Animal/Fish Genetics & Breeding) (Two Posts)
Qualifications Essential : i) Doctoral degree in Genetics/Fishery Science/Marine Science/ Zoology/ Aquaculture/ Mariculture ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Fish population Genetics using genetic markers.

Zonal Coordination Unit Zone I, Transfer of Technology Projects, ICAR, Punjab Agricultural University Campus, Ludhiana.
234. Senior Scientist (Horticulture) (One Post)
Qualifications Essential : i) Doctoral degree in Horticulture. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in the field of Horticulture.
235. Senior Scientist (Agricultural Extension) (One Post)
Qualifications Essential : i) Doctoral degree in Agricultural Extension. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in the field of Agricultural Extension

Central Institute for Research on Buffaloes, Hisar
236. Senior Scientist (Animal Physiology) (Two Posts)
Qualifications Essential : i) Doctoral degree in Animal Physiology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation · In branch of Animal Physiology/ Animal Reproduction.
237. Senior Scientist (Animal Nutrition) (Two Posts)
Qualifications Essential : i) Doctoral degree in Animal Nutrition ii) & iii) As in Item No. 182(ii) & 137(iii) above iv) Specialisation in Animal Nutrition.
238. Senior Scientist (Animal Reproduction) (One Post)
Qualifications Essential · i) Doctoral degree in Animal Reproduction/ Physiology. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Animal Reproduction.
239. Senior Scientist (Livestock Production and Management) (One Post)
Qualifications Essential : i) Doctoral degree in Livestock Production and Management/ Animal Production/ Reproduction. ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation in Animal Management

Indian Lac Research Institute, Ranchi
240. Senior Scientist (Mechanical Engineering) (One Post)
Qualifications Essential · i) Doctoral degree in Mechanical/ Agricultural Engineering with 5 years experience (excluding the period spent in obtaining the Ph.D. degree during service, subject to maximum of 3 (three) years) in research/ teaching/ extention education as a Scientist (Rs 2200-4000) (pre-revised) or in an equivalent position in the relevant subject. OR Masters degree in Mechanical Agricultural Engineering with 8 years experience in Research/ teaching/ extension education as Scientist (Rs 2200-4000) (pre-revised) or in an equivalent position in the relevant subject (ii) As in Item No 137(iii) above. (iii) Specialisation and experience in the field of design/ fabrication/ testing of machinery and equipment related to fabrication of Pilot Plants.

ICAR Research Complex for NEH Region, Barapani, Meghalaya
241. Senior Scientist (Forestry) (One Post)
Qualifications Essential : i) Doctoral degree in Forestry/Agroforestry/ Botany (Forest Ecology). ii) & iii) As in Item No. 182(ii) & 137(iii) above. iv) Specialisation and experience in Agro-Forestry.

TECHNICAL

Indian Veterinary Research Institute, Izatnagar
242. T-9 (Senior Librarian) (One Post)
Pay Scale : Rs. 3700-5000 (pre-revised). *Age* · Below 50 years (There will be no maximum age limit for the ICAR employees Relaxation to SC/ST candidates may be given in accordance with the orders issued by Govt of India from time to time).
Qualifications Essential : i) Bachelor's degree of a recognised University with Master's Degree (M.Lib.) in Library/Information Science OR (any equivalent degree or Certificate conferred by any organisation which are approved by the Ministry of Education, Govt. of India, like INSDOC and DRTC OR Master's degree of a recognised University with Diploma or Degree (B.Lib.) in Library/Information Science OR any equivalent certificate if conferred by any organisation which are approved by the Ministry of Education, Govt of India. ii) Five years experience for Diploma Holders. *Desirable :* 1. 3 years experience for degree holders. 2. Knowledge of one foreign language. 3. Experience of working in University/ Institute/ Council or any other organisation of repute and 4. Science Degree.

Central Institute of Fisheries Technology, Cochin
243. T-7 (Skipper) (One Post)
Pay Scale · Rs 10000-325-15200. *Age* . Below 45 years (There will be no maximum age limit for the ICAR employees. Relaxation to SC/ST candidates may be given in accordance with the orders issued by Govt. of India from time to time)
Qualifications Essential . i) Certificate of competency as Skipper for the fishing Vessels issued by the Mercantile Marine Department ii) Secondary School Leaving Certificate or equivalent. iii) 5 years practical experience on fishing vessels *Desirable :* Qualifications relaxable at the discretion of the ASRB in case of candidates otherwise well qualified. Competency Certificate issued by MMD not relaxable.

IMPORTANT NOTE : 1) The candidates selected for appointment to the posts in Animal Science disciplines and possessing degree in Veterinary Science/ Veterinary Science and Animal Husbandry followed by Masters and Doctoral degree in the relevant discipline will also be entitled to non-practicing allowance as admissible under the rules from time to time subject to fulfilment of conditions of entitlement for the same as prescribed by the Council. 2) The posts appearing at Sl. No. 137 to 159 will be filled up on tenurial basis for a period of five years. However, retirement age for all scientific and Technical posts is 60 years.

CLOSING DATE FOR RECEIPT OF APPLICATIONS IN AGRICULTURAL SCIENTISTS RECRUITMENT BOARD IS 14.9.1999.
(For candidates from abroad and in the Andaman and Nicobar Islands, Lakshadweep, Minicoy and Amindivi Islands, States/Union Territories in the North-Eastern Region, Ladakh division of J&K State, Sikkim, Pangi, Sub-division of Chamba, Lahul and Spiti, districts of Himachal Pradesh, last date will be 29.9.1999).

GENERAL INSTRUCTIONS : 1. For application form, please write to the **Secretary, Agricultural Scientists Recruitment Board, Krishi Anusandhan Bhawan, Pusa, New Delhi-110 012.** Request for form must specify **Advertisement No. and name of the post and Item No.** and should be accompanied by self addressed unstamped envelope (23x10 cms size). 2. Separate application with separate fee, separate No Objection Certificate, separate Vigilance Clearance Certificate is required for each post. 3. Application form complete in all respects, should reach the Office of the ASRB together with the application fee of Rs. 6/- (No fee for SC/ST candidates) in the form of crossed Indian Postal Order drawn in favour of the Secretary, Agricultural Scientists Recruitment Board by the closing date. Applications received after the closing date will not be entertained. **In case a candidate anticipates delay in forwarding of his application through proper channel, he must send an advance copy of the application alongwith the fee which must reach this office on or before the closing date.** Postal Order(s) obtained before the date of publication of advertisement and after the closing date of the applications will not be accepted. 4. The candidates should fill each and every column of Application Form at the appropriate place. Wherever the space is not sufficient they could add extra sheet but it should be strictly in the prescribed format. 5. Candidates abroad may apply on plain paper and send their applications together with an International Postal Order/ Bank draft covering the application fee drawn in favour of the Secretary, Agricultural Scientists Recruitment Board so as to reach this office of ASRB by the closing date. In countries where regular commercial channels are not available, the candidates can deposit the application fee in local currency with the Indian Mission/Posts abroad, who in turn will issue an R.B.I. draft in favour of the Secretary, Agricultural Scientists Recruitment Board, New Delhi. 6. The prescribed Essential Qualifications are minimum and possessing of same does not entitle candidates to be called for interview. Where the number of applicants is large, the Board may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement. 7. If required, candidates must appear for personal interview. 8. Higher initial pay may be recommended by the ASRB for specially qualified and experienced candidates for all the posts. 9. For all technical posts and other non-scientific positions a screening test may be conducted by the Board to be followed by an interview. 10 T.A. contribution will be admissible to those called for interview as per ICAR Rules. 11. Crucial date for determining the age limit for candidates will be the closing date for receipt of applications from candidates in India. 12. The option of use of Hindi in interviews exists in the Board. 13. Canvassing in any form will disqualify a candidate.

CORRIGENDUM

Reference ASRB Advertisement No. 3/99 which appeared in the Employment News/Rozgar Samachar and other Newspapers dated 17-23/4/1999. The post of Senior Scientist (LPT) at CARI, Izatnagar (Item No. 72) stands withdrawn due to administrative reasons. The fees paid by the candidates shall be adjusted against their future applications to the Board. Other contents remain unchanged.
Inconvenience caused in regretted.

davp 99/302

CLASSIFIED ADVERTISEMENTS

PONDICHERRY ENGINEERING COLLEGE

PILLAICHAVADI, PONDICHERRY-605 014

NOTIFICATION

No.PEC/E4/Recruit(T)/1999-2000/

Applications are invited from qualified candidates for the following vacancies :

Sl. No.	Department	Professor	Assistant Professor	Lecturer
1.	Mechanical Engineering	—	—	2
2.	Electronics & Communication Engineering	—	—	2
3.	Computer Science & Engineering	2	1	5
4.	Electrical & Electronics Engineering	—	—	2
5.	Electronics & Instrumentation Engineering	1	2	3
6.	Chemical Engineering	—	2	3
7.	Mathematics	—	—	1
8.	Physics	—	1	1
9.	Workshop Superintendent — 1 No. (Unreserved)			
10.	Programmer - 2 Nos. (Unreserved)			
11.	Senior Instructor in Chemical Engineering - 1 No (Unreserved)			
12.	Junior Instructor in Chemical Engineering - 1 No (Unreserved)			
13.	Superintendent Grade-I - 1 No. (Unreserved)			
14.	Superintendent Grade-II - 1 No. (Unreserved)			

Out of the 19 posts of Lecturers mentioned against Sl. No. 1 to 9, 3 posts are reserved for OBC's, 5 for ST and 1 for SC. The number of vacancies is subject to change.

Scale of Pay : i) Professor : 14300-450-22400*, ii) Assistant Profesor : 12000-375-18000*, iii) Lecturer : 8000-275-13500, iv) Workshop Superintendent : 12000-375-18000, v) Programmer : 8000-275-13500, vi) Senior Instructor : 6500-200-10500, vii) Junior Instructor : 5500-175-9000, viii) Superintendent Grade-I : 6500-200-10500, ix) Superintendent Grade-II : 5500-175-9000

*Revision of pay scale as per AICTE recommendation is under consideration.

Minimum Qualifications and experience for teaching posts :

i) **Professor :** i) Ph.D. with first class degree at Bachelor's or Master's level in appropriate branch of Engineering/Technology ii) 10 years experience in teaching/industry/research **out of which at least 5 years must be at the level of Assistant Professor or equivalent.**

Note : Candidates from Industry/Profession with recognised professional work of high standard recognised at National/International level equivalent to Doctorate would also be eligible.

ii) **Assistant Professor :** i) First Class Master's Degree in appropriate branch of Engineering/Technology OR Ph.D. in appropriate branch with First Class in Master's Degree in case of Teaching posts in Humanities & Sciences.

ii) 5 years experience in teaching/industry/research at the appropriate level.

Note : Candidates from Industry/Profession with recognised professional work equivalent to Master's Degree in the case of Engineering/Technology and Ph.D. in case of Humanities and Sciences as the case may be would also be eligible.

Desirable : Ph.D. Degree in Engineering/Technology or Post-Doctoral Work in case of Teaching posts in Maths and Physics.

iii) **Lecturer :** First Class Master's Degree in the appropriate branch of Engineering/Technology OR First Class Master's Degree with Ph.D. in appropriate branch of study in case of teaching posts in Maths and Physics.

Minimum Qualifications and Experience for Non-Teaching Staff :

i) **Workshop Superintendent :** 1) First class Master's Degree in Mechanical/Production/Industrial Engineering.

2) 5 years experience in teaching/industry/research at the appropriate level.

Note : Candidates from Industry/Profession with recognised professional work equivalent to Master's Degree in the case of Engineering/Technology may also be considered.

Desirable : Relevant experience in installation and maintenance of centralised workshops (with state-of-art equipments) at reputed organisations.

ii) **Programmer :** First Class B.E./B.Tech. Degree in Computer Science and Engineering or a First Class M.Sc. (Computer Science) Degree or First Class M.Sc. (Mathematics or Statistics) Degree with a First Class P.G. Diploma in Computer Applications.

In case of B.E/B.Tech and M.C.A. Degree holders minimum of one year experience in maintenance/programme development in a Computer Centre of an Engineering College or an equivalent organisation on different operating systems. In the case of M.Sc. (Computer Science) degree holders a minimum of two years of experience as above is required. In the other case a minimum of 8 years of experience as above is required.

iii) **Senior Instructor :** First Class Diploma in the concerned branch of Engineering with a minimum professional experience of atleast 8 years in a similar institution.

iv) **Junior Instructor :** Diploma in the concerned branch of Engineering preferably with a first class-with professional experience of atleast 3 years in the field concerned.

v) **Superintendent Grade-I :** a) A first class Degree from any of the University;

b) Atleast 10 years experience in Institutions of Higher Education/Government Department/Public Undertakings of which atleast 5 years should be in a supervisory capacity;

c) Knowledge of Government rules and procedure in administrative, academic and financial matters.

vi) **Superintendent Grade-II :** a) A University Degree with first or second division;

b) Atleast 8 years experience at a College/Institutions of Higher Education/Government Department/Public Undertakings of which atleast 3 years should be in a supervisory capacity;

c) Knowledge of Government rules and procedure in administrative, academic and financial matters.

Further details on qualifications, experience, field of specialisation in the concerned branch etc, will be supplied along with the application form, which may be obtained by addressing to **Principal, Pondicherry Engineering College, Pillaichavadi, Pondicherry-605 014** with a Demand Draft for Rs. 100/- (Rupees One hundred only) (Rupees Twenty for SC/ST) drawn in favour of **Principal, Pondicherry Engineering College** with a self-addressed envelope of Rs. 15/- of 23 x 10 cm size superscribed "Requisition for the application form for the post of ......" **The last date of issue and receipt of filled application form is ...15.09.1999.** Separate application form should be submitted for each post :

Note : i) Higher start of pay will be considered for deserving candidates :

ii) Consequential vacancies arising out of selection of existing staff will also be filled.

PRINCIPAL

KAVIKULAGURU KALIDAS SANSKRIT VISHWAVIDYALAYA

Baghele Bhavan, Sitalwadi, Mauda Road,
Ramtek-441 106 Dist. Nagpur

Advertisement No. KKSU/GA/ADVT-1/99/375 **Dated : 18 July, 1999**

EMPLOYMENT NOTICE

Applications are invited for the **Post of Registrar, Librarian, Dy. Engineer** (Civil), Kavikulaguru Kalidas Sanskrit Vishwavidyalaya (Maharashtra) Ramtek. So as to reach undersigned by **5.00 p.m. on or before 23rd August, 1999.**

1) **Registrar** — Post-1 (Open Category)

Qualification & Experience :

a) Appointment to the post of Registrar shall be made by nomination of a suitable person from amongst the persons who :

i) Unless already in the service of Universities or affiliated colleges are not less than 45 years of age

AND

ii) An eminent scholar with published work of high quality. Actively engaged in research with ten years experience in Post-Graduate Teaching and/or research at the University/ National Level Institutions, including experience of guiding research of doctoral level

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge of Sanskrit.

b) Proficiency in Marathi and English.

c) The appointment to the post of Registrar shall be for a period of five years, and he shall be eligible for reappointment.

Pay Scale : Rs. 4500-150-5700-200-7300 Plus other Allowances admissible under the University/Government Rules.

2) **Librarian** — Post-1 (Open Category)

Qualification & Experience :

a) First or Second Class M.Lib. Sc.

OR

M.A./M.Sc./M.Com. plus a First or Second Class B.Lib.Sc. or Diploma in Library Science.

b) At least ten years experience as Dy. Librarian or 15 years experience in a responsible professional officer capacity in University Libraries or affiliated Colleges' Libraries.

c) **Desirable** — Ph.D. Degree or research work in the field relevant to the profession.

d) **Preference** — Expertise and Experience in certain situations in academic Libraries like Training in Computerization or Information Technology or Archives and Manuscript Keeping or any other specialised areas.

e) Unless already in the service of Recognised Universities or affiliated colleges or regional Colleges, the age of the candidate should not be more than 50 yrs. (55 yrs. age in case of Backward class).

f) Evidence of innovative Library Service.

Pay Scale : Rs. 4500-150-5700-200-7300. Plus other Allowances admissible under the University/Government Rules.

3) **Dy. Engineer (Civil)** — Post-1 (Open Category)

Qualification & Experience

a) B.E. (Civil) with at least 5 yrs. experience of relevant field

OR

b) Diploma in Civil Engineering with 15 yrs. experience of relevant field.

Age Limit : Unless already in the services of Universities not more than 45 yrs. of age. (50 yrs. age in case of Backward class).

Pay Scale : Rs. 2200-4000 Plus other Allowances admissible under the University/ Government Rules.

Important Notes :

1. Nine Copies of the prescribed application form shall be supplied on payment of a non-refundable fee of Rs. 200/- (Rs. 100/- in respect of the applicants belonging to the Backward Classes on submission of the certified copy of the Caste Certificate), payable by Crossed Indian Postal Order or a Demand Draft, drawn in the name of the **Registrar, K.K. Sanskrit Vishwavidyalaya, Ramtek** alongwith a self addressed envelop (25 cms x 12 cms size).
2. Application(s) made on plain paper OR those in prescribed form received after the due date and time, shall not be entertained, under any circumstances, whatsoever.
3. Application(s) incomplete in any respect, shall be rejected without making any further reference.
4. Applicants who are in the employment, shall route their applications through their Employer, However, in case of an "Anticipated Delay" such applicants may submit in advance copies of their applications. In the event of applications duly forwarded by the Employer, not reaching the Registrar within the stipulated time, the applicant concerned shall be required to furnish a 'No Objection Certificate' from his/her Employer, at the time of interview in absence of which, he/she shall not be entitled to appear for the interview.
5. An applicant furnishing any incorrect or false information shall stand disqualified.
6. Vishwavidyalaya shall not be accountable for delays of any sort including the postal delay, if any.
7. Applicants shall not be entitled for any reimbursement in terms of TA/DA towards attending the interview.
8. Canvassing, in any form shall amount to disqualification.
9. Candidate knowing Sanskrit preferred.
10. The Pay-Scale mentioned for all the three posts may be revised as per Fifth Pay Commission.
11. The condition of experience in case of above three posts, may be relaxed in case of deserving candidates as per the discretion of the Selection Committee.
12. The forms will be sold from 22nd July, 99 between 12 noon to 4 pm in the University Office at Baghele Bhavan, Sitalwadi, Mouda Road, Ramtek, Dist. Nagpur.

REGISTRAR

ANNA UNIVERSITY

CHENNAI-600 025

Advertisement No. 001/PR14/99/Rec-2

Dated 29.07.1999

Applications are invited in the prescribed form for the following teaching posts in the University.

Details of Posts :

1. Professor — Chemical Engineering/Architecture
2. Assistant Professor : Electronics and Communication Engineering/Aeronautical Engineering
3. Lecturer : Textile Technology

(Number of posts reserved for SC/ST is Nil. However, other things being equal, preference will be given to SC/ST candidates.)

Scale of Pay :

Professor : Rs. 16400-450-20900-500-22400

Assistant Professor : Rs. 12000-420-18300

Lecturer : Rs. 8000-275-13500

Application form (details of prescribed qualification/field of specialisation and other particulars) can be had from the Registrar, Anna University, Chennai-25 on or after 05.08.99 on request accompanied by a Demand Draft for Rs. 500/- (Rs. 125/- for SC/ST candidates) dated not earlier than 30.07.99, drawn in favour of **Registrar, Anna University, Chennai-600 025** together with a self-addressed stamped envelope for Rs. 12/- of size 22 x 10 cm.

Candidates can file the application through Internet (Address : WWW.annauniv.edu).

The last date for issue of application is 31.08.99. The last date for receipt of completed application is 09.09.99.

Those who are in service must send their application through proper channel so as to reach this office **on or before 09.09.99.** Advance copy of the application **should** reach the University well in advance.

REGISTRAR

NIZAM'S INSTITUTE OF MEDICAL SCIENCES

(A University established under the State Act)

PUNJAGUTTA : HYDERABAD-500 082, A.P.

Rc.No. 8/3/99/Acad-5

Dated : 05.08.99

EMPLOYMENT NOTIFICATION

Applications are invited from the eligible candidates for post of Executive Registrar in the Nizam's Institute of Medical Sciences, Punjagutta, Hyderabad in the Scale of Rs. 5770-190-6150-230-7300-280-9260 (State Govt. Scales)

The applicant shall be :

a) An academician in the field of medical sciences not lower in rank that of a Professor of 3 years standing;

OR

b) Officer of the Government not lower in rank that of Deputy Secretary in Govt.,

OR

c) A Graduate, preferably a postgraduate with 10 years of administrative experience or academic experience of which 6 years supervisory experience in the cadre of Deputy Registrar or any equivalent post.

Prescribed application form can be had by sending a Demand Draft for Rs. 200/- obtained in favour of the Director, Nizam's Institute of Medical Sciences, Punjagutta, Hyderabad alongwith a self addressed stamped envelope of Rs. 20/- or by paying cash in person at Institute Cash Counter.

Last date for receipt of filled in applications with enclosures is 31.08.1999.

Prof. Kakarla Subbarao
DIRECTOR

MAR ATHANASIUS COLLEGE ASSOCIATION

M.A. COLLEGE OF ENGINEERING

KOTHAMANGALAM, KERALA-686 666

Applications are invited for the following post in the M.A. College of Engineering, Kothamangalam.

1. Librarian Grade-IV (Anticipated) : 1 No.

Qualification, scale of pay and age as per rules of M.G. University and Kerala Government.

Application forms and other details can be had from the Principal, M.A. College of Engineering, Kothamangalam-686 666, Kerala, on payment of Rs. 50/- in person or by D.D. drawn in the name of the Secretary, M.A. College Association, Kothamangalam with a self addressed envelope 23 x 10 cm affixing postal stamp worth Rs. 18/-. Filled up applications should reach the Secretary, M.A. College Association, Kothamangalam within 30 days of the date of the publication of the advertisement.

Kothamangalam
15.07.1999 **SECRETARY**

MAR ATHANASIUS COLLEGE ASSOCIATION

KOTHAMANGALAM, KERALA-686 666

CORRIGENDUM

As per our advertisement dated 14.05 1999, the last date for the receipt of filled up applications for the post of Lecturers in Computer Science & Engineering, Electronics & Communication Engineering and Mechanical Engineering (Category 1 to 3) is extended for a further period of 1 month from 14.07.99 to 13.08.1999.

Kothamangalam
14.07.1999 **SECRETARY**

CO-OPERATIVE ARTS & SCIENCE COLLEGE, MADAI

P.O. PAYANGADI. R.S., KANNUR

(Affiliated to the Kannur University)

WANTED

Applications are invited from the eligible candidates for the Post of Lecturer in History/Commerce/Travel & Tourism/Sociology in prescribed Form subject to the approval of Govt.

No. of Vacancies : 1 in each

Age : 22 to 35 (Usual relaxation will be allowed as per rules)

Qualifications : Second Class Master Degree in the concerned subject with atleast 55% of marks and with other qualifications prescribed by U.G.C. such as NET, M.Phil, Ph.D.

Application Form can be had from the Secretary, Payyanur Co-operative Educational Society Ltd., No. C. 853, P.O. Payyanur-670 307, Kannur District on payment of Rs. 200/- (Rupees Two hundred only) by crossed Demand Draft payable at Payyanur and self addressed duly stamped envelope. The filled application should reach the undersigned with in 30 days from the date of publication of this notification. The appointment will be made subject to the concurrence from the Empowered Committee/University.

President, Payyanur Co-operative
Educational Society Ltd.,
Payyanur-670 307
Kannur District, Kerala

UNIVERSITY OF DELHI

Advt. No. Estab. IV/162/99 **Dated : August 4, 1999**

Applications are invited on the prescribed forms for the following posts, so as to reach the **Registrar, University of Delhi, Delhi-110007 latest by 14th September, 1999 :**

NON-TEACHING POSTS

Sl. No.	Departments / Post / No. of Posts & Reservation, if any
1.	**BOTANY** *Technical Officer (1).*
2.	**BOTANY** *Sr Technical Assistant-(Artist) (1)*
3.	**ANTHROPOLOGY** *Sr Technical Assistant (Photographer-cum-Artist) (1).*
4.	**W. U. S. HEALTH CENTRE** *Nurse (1) (OBC)*
5.	**W. U. S. HEALTH CENTRE** *Pharmacist (1) (OBC).*
6.	**CHEMISTRY** *Gas Mechanic (1)*
7.	**CENTRAL OFFICE** *Technical Assistant (Computer) (13), (OBC-4, SC-1, ST-1, and UR-7) (Also Panel to be drawn)*
8.	**GEOLOGY** *Section Cutter (1)*
9.	**MUSIC** *Sarangi Accompanist (1)*
10.	**MUSIC** *Table Accompanist (2), (OBC-1 and UR-1)*
11.	**MUSIC** *Tanpura Accompanist (Tanpura Player) (1) (OBC)*
12.	**BOTANY** *Laboratory Attendant (2) (OBC-1 and UR-1)*
13.	**CHINESE & JAPANESE STUDIES** *Laboratory Attendant (1)*
14	**PHYSICS & ASTROPHYSICS** *Laboratory Attendant (4) (OBC-2 and UR-2)*
15.	**W.U S. HEALTH CENTRE** *Dresser (2) (OBC-1 and UR-1)*

TEACHING POSTS

Sl. No.	Departments / Post / No. of Posts / Reservation & Special / Desirable Qualifications, if any
16.	**AFRICAN STUDIES** *Reader (1) (Political Science)* A Specialisation in African Political Science B Field work experience or visiting assignment at an African University and C Knowledge of an African language
17.	**COMMERCE** *Reader (1) International Finance*
18.	**LIBRARY AND INFORMATION SCIENCE** *Reader (1), Lecturer (1) (SC)* Desirable for both the Posts : Knowledge of Computer and their applications in Library and Information Science
19.	**PHILOSOPHY** *Professor (2)* 1st Post . Moral Philosophy, 2nd Post Open
20.	**PSYCHOLOGY** *Lecturer (1)*
21.	**HISTORY** *Professor (2)* 1st Post Modern Indian History, 2nd Post European History, *Reader (1)* Ancient Indian History

Applications are also invited for the following posts which had been advertised earlier in the Advt. No. Estab. IV/154/97 dated 13.10.1997. Persons who have applied earlier need not apply again. However applications received earlier will be screened according to the revised qualifications :-

22. **URDU** *Reader (1),* Specialization in Classical Urdu Poetry and Poetics alongwith the background of Persian and Arabic language and literature, *Research Associate (1)*

Ref. : Advertisement No. Estab.-IV/161/99 dated 7th May, 1999.

CORRIGENDUM

The following note may be added for the Post of the Director, Dr B. R Ambedkar Centre for Biomedical Research

"The appointment of the Director of the Centre shall be made for a period of five years which can be extended for a period of two years "

SC = Scheduled Caste
ST = Scheduled Tribe
OBC = Other Backward Classes
UR = Un-reserved

SCALE OF PAY

NON-TEACHING POSTS :

Sl No 1 Rs 8000-275-13500
Sl No 2 & 3 Rs 5500-175-9000
Sl No 4 Rs 5000-150-8000
Sl No 5 to 7 Rs 4500-125-7000
Sl No 8 to 11 Rs 4000-100-6000
Sl No 12 to 15 Rs 2650-65-3300-70-4000

TEACHING POSTS :

Professor
Rs 16400-450-20900-500-22400
Reader Rs 12000-420-18300
Lecturer Rs 8000-275-13500

Research Associate (A) Rs 8000/- (Fixed), (B) Rs 8800/- (Fixed), (C) Rs 10500/- (Fixed), (in one of the grades depending on the recommendations of the Selection Committee)

All the above posts except those of Research Associate carry DA, CCA, HRA etc as admissible under rules in force in the University from time to time

Application forms for the above posts and details regarding qualifications can be had from the **Establishment Branch-IV (Room No. 205), New Administrative Block, University of Delhi, Delhi-110 007,** during working days (from 10 00 a m to 12 30 p m and 2 00 p m to 5 00 p m) either personally or by sending a self addressed & postage stamped envelope worth Rs 22/- (size 13 cms x 28 cms)

APPLICATION FEE :

Application fee of Rs 100/- (Rs 25/- in case of SC/ST) (Non-Refundable) for each post at Sl. No 1 and 16 to 22 and Rs 20/- (Rs 5/- in case of SC/ST/OBC) (Non-Refundable) for each post at Sl No 2 to 15 in the form of Indian Postal Order/Bank Draft drawn in favour of the Registrar, University of Delhi, payable at Delhi/New Delhi is required to be submitted alongwith the Application Form Candidates must write their name and post applied for on the backside of the Bank Draft/Indian Postal Order

NOTE :

1. It will be open to the University to consider names of suitable candidates who may not have applied
2. Number of posts is given within parenthesis against each post.
3. University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.
4. Relaxation of any of the qualifications may be made in exceptional cases on the recommendations of the Selection Committee
5. For Professor and Reader, other things being equal, preference will be given to SC/ST candidates
6. 3% posts of lecturers are reserved for Physically handicapped candidates
7. **Applications duly filled in for the posts under Sl. No. 2 to 6 and 8 to 15 may be sent directly to the respective Head of the Department, University of Delhi.**
8. Canvassing in any form by or on behalf of the candidates will disqualify the candidates.

K.K. PANDA
REGISTRAR

MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY

SWARNAJAYANTI FELLOWSHIPS*

On the occasion of the 50th anniversary of India's Independence, Government of India have instituted a scheme "the Swarnajayanti Fellowships" by which a selected number of young scientists will be provided special assistance and support to enable them to pursue basic research of a world class standard in frontier areas of science and technology. The Fellowships are scientist-specific and not institution-specific, very selective and have close academic monitoring.

Nature of support : The support will cover all the requirements for performing at the highest level and will include, in addition to an attractive fellowship amount of Rs. 25,000 per month, grants for equipment, computational and communication facilities, consumables. contingencies, administrative support, national and international travel and other special requirements.

Duration : The duration of the fellowship will be for a period not exceeding five years.

Eligibility : The applicant should possess one of the following degrees or equivalent : Ph.D in Science/ Engineering, Masters in Engineering or Technology / MD in Medicine. Scientists should be active in the frontier areas of science and engineering with outstanding contributions, (research publications, peer recognition etc.) in his areas of research. The fellowship is open to Indian Nationals residing in India or abroad. The scientists can choose to work at any S&T institution in India. The fellowship is open to scientists between 30 to 40 years as on December 31, 1999.

Selection : The selection procedure will include consideration at various stages. An empowered committee will make the final selection, based on the recommendation of the expert committees.

Application : Application for the "Swarnajayanti Fellowships" are invited from eligible candidates in the format given below. The candidates may be required to submit further additional information and or presentation before final selection. Application in the prescribed format only along with the project document should reach **Dr. P.K.B. Menon, Joint Adviser, Department of Science and Technology, Technology Bhawan, New Mehrauli Road, New Delhi-110016** on or before **September 30, 1999.** The last date for receiving applications from abroad is **October 30, 1999. Applications received after the last date will not be considered.**

FORMAT FOR APPLICATION

1. Broad Subject Area (Life Sciences, Physical Sciences, Chemical Sciences, Earth & Atmospheric Sciences, Mathematical Sciences, Engineering Sciences).
2. Specialisation
3. Name of the Candidate
4. Mailing Address (Indicate Telephone, Fax and e-mail address also)
5. Date of Birth :
6. Educational Qualification :
   (Starting from B.Sc. onwards)

Sl.No.	Degree	University	Year	Subjects	Percentage
1	2	3	4	5	6

7. a) Details of professional training and research experience, specifying period and list of significant publications during the last 5 years with details.
   b) Details of employment:
8. Professional recognition, awards, fellowships received:
9. Details of the proposed project to be undertaken during the Fellowship period :
   (Also specify the work at present engaged in, future plan, prospects after the fellowship, how are these related to the strenthening of basic research in the country etc.)
10. Detailed financial requirements for 5 years and phasing for each year.
11. Name of the institution where project is to be implemented.
12. Nomination/Recommendation :
    (This should be from Fellows of the National Academics, Directors of National Laboratories, Heads of S&T Departments of GOI or Vice Chancellors and should indicate the candidate's competence for the Fellowship and should be sent directly to DST in confidence).

***This advertisement is also available on the internet at : http://www.nic.in/snt/news.htm**

davp 99/322

BUNDELKHAND UNIVERSITY

JHANSI - 284128, (U.P.) INDIA

ADMISSION NOTICE

Bundelkhand University situated at the historical city of Jhansi was established in 1975. The beloved place of Rani Laxmi Bai is the heartland of India. The University proudly announces the following courses on the occasion of its Silver Jubilee. Applications for admission to the following courses, being introduced under the Self Financing Scheme, are invited from candidates as per prescribed eligibility :

S.NO.	COURSE	INTAKE	DURATION	MINIMUM ELIGIBILITY
1.	M.Sc. Micro-Biology	20	2 yrs.	B.Sc. Bio group/Micro biology with 50% marks
2.	M.Sc. Bio-chemistry	20	2 yrs.	B.Sc. Bio/Chem. with 50% marks
3.	*B. Pharma	20	4 yrs.	10+2 Bio. IInd Division
4.	D. Pharma	30	2 yrs.	10+2 Bio. IInd Division
5.	B.A. (Hons.) Human Rights	30	3 yrs.	10+2 in IInd Division
6.	*Integrated LLB	50	5 yrs.	10+2 in IInd Division
7.	L.L.M.	10	2 yrs.	L.L.B. with 60% marks
8.	B.Sc. (Hons.) Computer Science	50	3 yrs.	10+2 with Maths in Second Division
9.	BCA	50	3 yrs.	10+2 with Maths in Second Division
10.	*MCA	20	3 yrs.	Graduate in any discipling with Maths at 10+2 level
11.	PGDCA	20	1 yr.	Graduate Science with Maths - 50% Marks
12.	M.Sc. Maths with Comp. Application	20	2 yrs.	B.Sc. (Maths) with Second Division - 50% Marks
13.	M.Sc. Statistics with Computer Programming	20	2 yrs.	B.Sc. Maths / Stats in Second Division - 50% Marks
14.	Dip. in Library Automation	20	1 yr.	B.Lib. Sc. in Second Division
15.	Master of Social Works (MSW)	30	2 yrs.	Graduate in any discipline in Second Division
16.	M.A. in Rural Eco. & Cooperation	30	2 yrs.	Graduate in any discipline in Second Division
17.	Master of Banking Economics and Finance (MBEF)	60	2 yrs.	Graduate in any discipline in Second Division
18.	Master of Travel Management (MTM)	40	2 yrs.	Graduate in any discipline in Second Division
19.	Master of International Business Management (MIBM)	40	2 yrs.	Graduate in any discipline in Second Division
20.	Master in Hospital Management (MHM)	20	2 yrs.	MBBS/BDS
21.	Bachelor of Business Administration (BBA)	60	3 yrs.	10+2 in any discipline in IInd Division
22.	Bachelor of Hotel Management (BHM)	60	3 yrs.	10+2 in any discipline in IInd Division

* *Courses being introduced, subject to approval by appropriate authorities.*

Fee structure and reservations, as per the Govt. of U.P. /University Norms.

The Bulletin of Information cum Application form for all the above courses can be obtained from the **Registrar, Bundelkhand University**, by sending a bank draft of Rs. 185/- made in favour of the **Finance Officer, Bundelkhand University**, drawn on **State Bank of India, Bundelkhand University Branch, Jhansi**, or may be collected in person from the cash counter of the University on all working days from 10:00 a.m. to 2.00 p.m. against cash payment of Rs. 150/-.

The last date of receipt of completed application form is **September 20th, 1999.**

ADMISSION TEST : Admission test will be held at Delhi and Jhansi on **Sunday, September 26th, 1999.**

DR. R. S. RAM
REGISTRAR

Last Date of Receiving Completed Form : September 20th, 1999

Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delh
Grams: ASINDU. Phones: 3230059, 3232429. Fax: 011-3236105 E-Mail : aiu@del2.vsnl.net.in Website : http://www.aiuweb.o
Printed by Tara Art Press, B-4, Hans Bhawan, B.S. Zafar Marg, New Delhi-110002. Tel. 3318626, 3319686